ITW Dymon

MATERIAL SAFETY DATA SHEET

Prepared: 01 April 2010

Section 1 – Product and Company Identification

Product(s): **Orange® Stainless Steel Cleaner**
Formula: A345
Part Number(s): 34520

Company Name & Address:

ITW Dymon
805 E. Old 56 Hwy.
Olathe, KS 66061
800-443-9536 (8 a.m. – 5 p.m. Weekdays, CDT)

Emergency Numbers:

IN CASE OF EMERGENCY, CALL Infotrac @ 1-800-535-5053, 24 hrs.
INTERNATIONAL EMERGENCY NUMBER 352-323-3500
Poison Control Center: 1-800-222-1222

Material Safety Data Sheets: www.dymon.com

Section 2 – Hazards Identification

CAUTION. Contains petroleum distillates – aspiration hazard. May be harmful or fatal if swallowed. Can enter lungs and cause damage. May cause eye, skin and respiratory tract irritation. May cause central nervous system effects if used without adequate ventilation. Contents under pressure.

Potential Health Effects

EYES:	May cause eye irritation.
SKIN:	May cause skin irritation.
INHALATION:	May cause respiratory tract irritation.
INGESTION:	*Aspiration hazard. Harmful or fatal if swallowed.*
Signs/symptoms of exposure: Redness, tearing or burning in eyes. Drying or cracking of skin. Nose and throat irritation. Nausea, drowsiness, dizziness, and loss of coordination. Medical conditions generally aggravated by exposure: pre-existing skin and lung disorders may be adversely affected. Follow good chemical hygiene practices to avoid these hazards.	

HMIS Rating Health – 1 Flammability – 1 Reactivity – 0 Personal Protection – A

Section 3 – Composition/Information on Ingredients

Ingredient	CAS Number	Percent Range
Water	7732-18-5	60 – 100
Synthetic Isoparaffinic Hydrocarbon	64742-48-9	10 – 30
Isobutane	75-28-5	5 – 10
White Mineral Oil	8042-47-5	3 – 7
Propane	74-98-6	1 – 5
Sorbitan Oleate	1338-43-8	1 – 5

Any substance listed as hazardous by the states of California, Florida, Illinois, Michigan, New Jersey, Ohio, Pennsylvania or Texas is described above if known present in regulated concentrations.

Section 4 – First Aid Measures

EYES:	Flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Seek medical attention immediately.
SKIN:	Wash with soap and water. If irritation arises and persists seek medical attention. Launder clothing and shoes before reuse.
INHALATION:	Move to fresh air. If breathing has stopped, qualified personnel should administer artificial respiration.

INGESTION:	Do NOT induce vomiting unless directed by a physician. Aspiration hazard. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

Section 5 – Fire Fighting Measures

Flashpoint (PMCC):	130°F
Extinguishing Media:	Treat as an oil fire. Carbon dioxide, dry chemical, foam.
Special Fire Fighting Procedures:	Keep containers cool and vapors down with water spray. Prevent runoff from entering sewers and public waterways. Wear self-contained breathing apparatus (SCBA) in chemical fires.
Hazardous Products of Combustion:	Carbon dioxide, carbon monoxide, smoke, soot, and various organic oxidation byproducts.

Section 6 – Accidental Release Measures

Small spill:	Wipe up small releases with a dry absorbent cloth or other absorbent material.
Large spill:	Ventilate area and block traffic. Eliminate all ignition sources. Absorb liquid with vermiculite, absorbent cloth, or other absorbent material. Prevent material from entering sewers and drains. Transfer contaminated material into suitable container for proper disposal.

Section 7 – Handling and Storage

Handling:	Do not swallow. Avoid contact with eyes, skin and clothing. Avoid inhaling mists or vapors. Do not smoke while using. Use only with adequate ventilation. Wash thoroughly after handling. Launder clothing before reuse. Do not deliberately concentrate and inhale vapors. Direct spray away from face. Spray can in upright position only. Follow good chemical hygiene practices when handling this material. Use from original container only and follow label directions carefully.
Storage:	Keep away from heat, sparks, open flame and direct sunlight. Store in a cool (less than 120° F) well-ventilated area. Keep out of reach of children. Do not contaminate water, food or feed by use or storage. Do not puncture or incinerate container. Replace cap when not in use.

Section 8 – Exposure Controls/Personal Protection

Engineering controls:	Ventilation not usually necessary but should be provided in the event of overexposure.
Exposure limits:	Synthetic Isoparaffinic Hydrocarbon (CAS #64742-48-9)=117 ppm TWA, Manufacturer's Recommendation Isobutane (75-28-5)=800 ppm OSHA; 800 ppm ACGIH White Mineral Oil (CAS# 8042-47-5)= 5 mg/m3 OSHA ; 10 mg/m3 STEL ACGIH Propane (CAS# 74-98-6)=1000 ppm OSHA; Asphyxiant ACGIH
Eye protection:	Yes, wear approved safety glasses or goggles if direct contact is possible.
Skin protection:	*Yes, wear impervious gloves if prolonged direct contact is possible.*
Respiratory protection:	Not usually necessary. If vapors are present or irritation is experienced, use NIOSH/MSHA approved respirator.

Section 9 – Physical and Chemical Properties

Appearance and Odor: White opaque lotion-like liquid with a citrus odor.

pH: 7.0 ± 0.5	**Boiling Point:** 212° F	**Specific Gravity:** 0.935
Vapor Density: >1	**Flame Projection:** None	**Solubility in Water:** Miscible
Pressure: 93 psig	**Volatile Organic Compounds (VOCs):** 26.63 % by weight	

Section 10 – Stability and Reactivity

Hazardous Polymerization:	This product will not undergo hazardous polymerization.
Hazardous Decomposition or Byproducts:	Carbon dioxide, carbon monoxide, smoke, soot, and various organic oxidation byproducts.
Chemical Stability:	Stable
Incompatible Materials:	Strong acids and alkalis, oxidizers, and select amines.

Section 11 – Toxicological Information

Section 12 – Ecological Information

No data.

Section 13 – Disposal Considerations

Dispose of in accordance with all applicable local, state, and federal regulations.
Waste information: If this product becomes a waste, it would not be a hazardous waste as defined by RCRA (40CFR261). However the waste should be properly evaluated in case of modification prior to disposal.

Section 14 – Transport Information

The following transportation information is based on Department of Transportation Regulations found in 49 CFR. If shipping this product by air please refer to International Air Transport Association (IATA) Dangerous Goods Regulations. If shipping this product by ocean please refer to International Maritime Dangerous Goods Regulations (IMDG). To find how to ship this product please refer to the UN# listed below.

	UN #	Proper Shipping Description	Hazard Class	Packing Group
DOT Information	*None*	*Consumer Commodity*	*ORM-D*	*None*

Marine Pollutants: None

Section 15 – Regulatory Information

US Federal Regulations

Toxic Substances Control Act (TSCA): All ingredients are on the TSCA inventory or exempt from listing.

CERCLA RQ

None

SARA 313 Components

None

State and Local Regulations

California Proposition 65
None

Section 16 – Other Information

WARNING! The use of this product is beyond the control of the manufacturer; therefore, no guarantee, expressed or implied, is made as to the effects of such or the results to be obtained if not used in accordance with directions or established safe practice. The user must assume all responsibility, including injury or damage, resulting from its misuse as such, or in combination with other materials. The manufacturer warrants only that this product meets the manufacturer's specifications for such product. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AS TO DESCRIPTION, QUALITY, AND MERCHANTABILITY. FITNESS FOR ANY PARTICULAR PURPOSE, PRODUCTIVENESS OR ANY OTHER MATTER, OF THIS PRODUCT. THE MANUFACTURER SHALL BE IN NO WAY RESPONSIBLE FOR THE IMPROPER USE OF THIS PRODUCT. The sole and exclusive remedy against the manufacturer for breach of warranty shall be reimbursement of the purchase price of the product in the event that a defective condition of the product shall be found to exist. NO OTHER REMEDY (INCLUDING BUT NOT LIMITED TO INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR INJURY TO PERSON OR PROPERTY OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS) SHALL BE AVAILABLE.

Material Safety Data Sheet: OPTI-GRO GROUND ASSAULT

Supercedes Date 11/13/2003 **Issuing Date** 02/23/2009

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name OPTI-GRO GROUND ASSAULT
Product Code 1182
Information on Manufacturer
CHECK-MARK DIV. OF DM RESOURCES, INC.
1310 E. NORTHGATE DRIVE
IRVING, TEXAS 75062

Recommended Use insecticide
Chemical Nature *Petroleum distillates*
Emergency Telephone Number
CHEMTREC ® 800-424-9300

2. HAZARDS IDENTIFICATION

Emergency Overview
Warning
May cause skin irritation
Causes eye irritation
May be harmful if inhaled
Harmful or fatal if swallowed

Color Gold **Physical State** Liquid **Odor** Petroleum distillates

Potential Health Effects

Principle Route of Exposure	Skin contact, Eye contact, Inhalation.
Primary Routes of Entry	Skin Absorption, Inhalation.
Acute Effects	
Eyes	Causes eye irritation.
Skin	May cause skin irritation. May be absorbed through the skin in harmful amounts.
Inhalation	May cause irritation of respiratory tract. Inhalation may cause central nervous system effects. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration hazard if swallowed - can enter lungs and cause damage. May be fatal if swallowed and enters airways.
Chronic Effects	Prolonged skin contact may defat the skin and produce dermatitis. Prolonged or repeated inhalation may cause damage to the lungs. Lung edema.
Target Organ Effects	Central nervous system.
Aggravated Medical Conditions	Skin disorders. Respiratory disorders. Neurological disorders.
Potential Environmental Effects	See Section 12 for additional Ecological information..

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	*CAS-No*
Permethrin	52645-53-1
Petroleum Distillate	64742-47-8

4. FIRST AID MEASURES

General Advice	Avoid contact with skin, eyes and clothing. Avoid breathing vapors, mist or gas.
Eye Contact	Rinse thoroughly with plenty of water, also under the eyelids. Get medical attention if irritation develops and persists.
Skin Contact	Remove/Take off immediately all contaminated clothing. Wash off immediately with plenty of water for at least 15 *minutes. If symptoms persist, call a physician or Poison Control Centre immediately.*
Inhalation	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
Ingestion	Drink 1 or 2 glasses of water. Do NOT induce vomiting. Call a physician or Poison Control Centre immediately. Never give anything by mouth to an unconscious person.
Notes to Physician	Aspiration hazard if swallowed - can enter lungs and cause damage.

5. FIRE-FIGHTING MEASURES

Flash Point > 200°F / > 93°C **Method** Tag closed cup
Autoignition Temperature No information available.
Flammability Limits in Air % Petroleum distillates. **Upper** 7 **Lower** 0.6
Suitable Extinguishing Media
Water spray, Carbon dioxide (CO2), Foam, Dry chemical.
Specific Hazards Arising from the Chemical
Material can create slippery conditions.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA	**Health**	1	**Flammability**	1	**Instability**	1
HMIS	**Health**	1	**Flammability**	1	**Instability**	1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Use personal protective equipment. Prevent further leakage or spillage if safe to do so. Material can create slippery conditions.
Environmental Precautions	Do not flush into surface water or sanitary sewer system.

Methods for Containment Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Methods for Cleaning Up Pick up and transfer to properly labeled containers.

Neutralizing Agent Not applicable.

7. HANDLING AND STORAGE

Handling Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Remove and wash contaminated clothing before re-use.

Storage Keep container tightly closed in a dry and well-ventilated place.

Storage Temperature **Minimum** 40°F / 4°C **Maximum** 100°F / 38°C

Storage Conditions **Indoor** X **Outdoor** **Heated** **Refrigerated**

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH
Permethrin	No data available	no data available	no data available
Petroleum Distillate	No data available	no data available	no data available

Engineering Measures Use with local exhaust ventilation. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection Safety glasses with side-shields.

Skin Protection Wear suitable protective clothing, Impervious gloves.

Respiratory Protection Use NIOSH approved respiratory protection.

General Hygiene Considerations Ensure that eyewash stations and safety showers are close to the workstation location.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid	**Viscosity**	Non viscous
Color	Gold	**Odor**	Petroleum distillates
Appearance	Transparent	**pH**	@ 5% - 7.5
Specific Gravity	0.939	**Evaporation Rate**	0.01 (Butyl acetate=1)
Percent Volatile (Volume)	69	**VOC Content (%)**	0
Vapor Pressure	0.06 mmHg @ 70 °F	**Vapor Density**	6.8 (Air = 1.0)
Solubility	Emulsifies	**Boiling Point/Range**	>200°F / 93°C

10. STABILITY AND REACTIVITY

Chemical Stability Stable. Hazardous polymerization does not occur.

Conditions to Avoid Heat, flames, and sparks.

Incompatible Products Strong oxidizing agents. Acids. Bases.

Hazardous Decomposition Products Nitrogen oxides (NOx), Carbon oxides.

Possibility of Hazardous Reactions None under normal processing..

11. TOXICOLOGICAL INFORMATION

Product Information No information available.

Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation	Draize Test	Other
Permethrin	383 mg/kg (Rat)	1750 mg/kg (Rat) 2 g/kg (Rabbit)	no data available	no data available	no data available
Petroleum Distillate	5000 mg/kg (Rat)	2000 mg/kg (Rabbit)	5.2 mg/L (Rat) 4 h	no data available	no data available

Chronic Toxicity

Component	Mutagenicity	Sensitization	Developmental Toxicity	Reproductive Toxicity	Target Organ Effects
Permethrin	no data available	no data available	no data available	no data available	no data available
Petroleum Distillate	no data available	no data available	no data available	no data available	CNS

Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Other
Permethrin	not applicable	not applicable	not applicable	not applicable	not applicable
Petroleum Distillate	not applicable	not applicable	not applicable	not applicable	not applicable

12. ECOLOGICAL INFORMATION

Product Information No information available.

Component Information

Component	Toxicity to Algae	Toxicity to Fish	Microtox	Water Flea	log Pow
Permethrin	no data available	LC50= 0.016 mg/L Pimephales promelas 96 h	no data available	no data available	N/A

Petroleum Distillate	no data available	LC50= 1740 mg/L Lepomis macrochirus 96 h LC50= 45 mg/L Pimephales promelas 96 h	no data available	LC50 = 4720 mg/L 96 h	N/A

Persistence and Degradability No information available.
Bioaccumulation No information available.
Mobility No information available.

13. DISPOSAL CONSIDERATIONS

Product Disposal Dispose of in accordance with local regulations.
Container Disposal Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

DOT Not regulated
- **Proper Shipping Name** Environmentally hazardous substances,liquid,n.o.s.
- **Hazard Class** 9
- **UN-No** UN3082
- **Packing Group** III
- **Description** Environmentally hazardous substances,liquid,n.o.s.(Permethrin),9,UN3082,PG III,Marine Pollutant

TDG Not regulated
- **Proper shipping name** Environmentally hazardous substance, liquid, n.o.s.
- **Hazard Class** 9
- **UN-No** UN3082
- **Packing Group** III
- **Description** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Permethrin),9,UN3082,PG III,Marine Pollutant

ICAO Not regulated
- **UN-No** UN3082
- **Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s.*
- **Hazard Class** 9
- **Packing Group** III
- **Shipping Description** Environmentally hazardous substance, liquid, n.o.s.*(Permethrin),9,UN3082,PG III

IATA Not regulated
- **UN-No** UN3082
- **Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s.*
- **Hazard Class** 9
- **Packing Group** III
- **ERG Code** 9L
- **Shipping Description** UN3082,Environmentally hazardous substance, liquid, n.o.s.*(Permethrin),9,PG III

IMDG/IMO Not regulated
- **Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s.
- **Hazard Class** 9
- **UN-No** UN3082
- **Packing Group** III
- **EmS No.** F-A, S-F
- **Shipping Description** UN3082, Environmentally hazardous substance, liquid, n.o.s.(Permethrin),9,PG III,Marine Pollutant

15. REGULATORY INFORMATION

Inventories
TSCA Complies
DSL Complies
U.S. Federal Regulations
SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40n of the Code of Federal Regulations, Part 372:

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Permethrin	52645-53-1	10-30	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Chronic Health Hazard	Fire Hazard	Sudden Release of Pressure Hazard	Reactive Hazard
Yes	Yes	No	No	No

CERCLA

Component	Hazardous Substances RQs	CERCLA EHS RQs
Permethrin	Not applicable	Not applicable
Petroleum Distillate	Not applicable	Not applicable

Canada

WHMIS Hazard Class

Not applicable.

16. OTHER INFORMATION

Prepared By	Kristen Stansbury
Supercedes Date	11/13/2003
Issuing Date	02/23/2009
Reason for Revision	No information available.
Glossary	No information available.
List of References.	TBD

CHECK-MARK DIV. OF DM RESOURCES, INC. assumes no responsibility for personal injury or property damage caused by the use, storage, or disposal of the product in a manner not recommended on the product label. Users assume all risks associated with such unrecommended use, storage or disposal of the product. The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

Initial Preparation Date: *10/22/2004*
Last Revision Date: *5/15/2013*
Effective Date: *6/11/2013*

MATERIAL SAFETY DATA SHEET

PRODUCT IDENTITY: PEAK® GLOBAL LIFETIME CONCENTRATE ANTIFREEZE & COOLANT

1. CHEMICAL PRODUCT & COMPANY INFORMATION

OLD WORLD INDUSTRIES, LLC
4065 COMMERCIAL AVENUE
NORTHBROOK, ILLINOIS 60062
PHONE: 847-559-2000
EMERGENCY PHONE: 1-800-424-9300 (CHEMTREC)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Material	*CAS#*	*% by Wt*	*PEL (OSHA)*	*TLV (ACGIH)*
Ethylene Glycol	107-21-1	90 - 97	50 ppm	50 ppm
Denatonium Benzoate	3734-33-6	30-50 ppm	None	None
Diethylene Glycol	111-46-6	< 5	None	None
Hydrated inorganic acid, organic acid salts	proprietary	< 5	10 mg/m^3	1 mg/m^3
Water	7732-18-5	< 4	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Slight odor.	*May be fatal if swallowed.*	*Vapors can cause eye irritation.*

Lowest Known LD50 (Oral)	107-21-1	5840 mg/kg (Rats)
Lowest Known LD50 (Skin)	107-21-1	9530 mg/kg (Rabbits)

HAZARD RATING SYSTEM

NFPA: HEALTH: 1	**FLAMMABILITY: 1**	**REACTIVITY: 0**
HMIS: HEALTH: 2	**FLAMMABILITY: 1**	**REACTIVITY: 0**

KEY: 0 – Minimal 1 – Slight 2 - Moderate 3 - Serious 4 - Severe

POTENTIAL HEALTH EFFECTS

Routes of Exposure: Inhalation, Ingestion, Skin Contact/Absorption, Eye Contact

Eye: May cause slight transient (temporary) eye irritation. Corneal injury is unlikely. Vapors or mists may cause eye irritation.

Skin: Prolonged or repeated exposure not likely to cause significant skin irritation. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. Repeated skin exposure may result in absorption of harmful amounts. Massive contact with damaged skin or of material sufficiently hot to burn skin may result in absorption of potential lethal amounts.

Ingestion: Single dose oral toxicity is considered to be moderate. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing amounts larger than that may cause serious injury, even death.

Inhalation: At room temperature, exposures to vapors are minimal due to physical properties; higher temperatures may generate vapor levels sufficient to cause adverse effects.

Systemic (Other Target Organ) Effects: Repeated excessive exposures may cause severe kidney and also liver and gastrointestinal effects. Signs and symptoms of excessive exposure may be central nervous system effects. Signs and symptoms of excessive exposure may be nausea and/or vomiting. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects. Observations in animals include formation of bladder stones after repeated oral doses of ethylene glycol. Reports of kidney failure and death in burn patients suggest the ethylene glycol may have been a factor. The use of topical applications containing this material may not be appropriate in severely burned patients or individuals with impaired renal function.

Cancer Information: Based on data from long-term animal studies, ethylene glycol is not believed to pose a carcinogenic risk to man.

Teratology (Birth Defects): Exposure to ethylene glycol has caused birth defects in laboratory animals only at doses toxic to the mother.

Reproductive Effects: Ethylene glycol has not interfered with reproduction in animal studies except at very high doses.

CHRONIC, PROLONGED OR REPEATED OVEREXPOSURE

Effects of Repeated Overexposure: Repeated inhalation of ethylene glycol mist may produce signs of central nervous system involvement, particularly dizziness and nystagmus.

Other Effects of Overexposure: repeated skin contact with ethylene glycol may, in a very small proportion of cases, cause sensitization with the development of allergic contact dermatitis. The incidence is significantly less than 1% with the undiluted material.

4. FIRST AID MEASURES

Ensure physician has access to this MSDS.

TREATMENT

Eyes: Immediately flush eyes with large amounts of water for 15 minutes, lifting lower and upper lids. Get medical attention as soon as possible. Contact lenses should never be worn when working with this chemical.

Skin: Flush area of skin contact immediately with large amounts of water for at least 15 minutes while removing contaminated clothing. If irritation persists after flushing, get medical attention promptly. Wash clothing before re-use.

Inhalation: If inhaled, immediately remove victim to fresh air and call ***emergency medical care.*** If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion: Obtain medical attention immediately. If patient is fully conscious, give two glasses of water. Do not induce vomiting. If medical advice is delayed, and if the person has swallowed a moderate volume of material (a few ounces), then give three to four ounces of hard liquor, such as whisky. For children, give proportionally less liquor, according to weight.

Notes to Physician: It is estimated that the lethal oral dose to adults is of the order of 1.0 ml/kg. Ethylene glycol is metabolized by alcohol dehydrogenate to various metabolites including glyceraldehydes, glycolic acid and oxalic acid which cause an elevated anion-gap metabolic acidosis and renal tubular injury. The signs and symptoms in ethylene glycol poisoning are those of metabolic acidosis, CNS depression, and kidney injury. Urinalysis may show albuminuria, hematuria and oxaluria. Clinical chemistry may reveal anion-gap metabolic acidosis and uremia. The currently recommended medical management of ethylene glycol poisoning includes elimination of ethylene glycol and metabolites, correction of metabolic acidosis and prevention of kidney injury. It is essential to have immediate and follow up urinalysis and clinical chemistry. There should be particular emphasis on acid-base balance and renal function tests. A continuous infusion of 5% sodium bicarbonate with frequent monitoring of electrolytes and fluid balance is used to achieve correction of metabolic acidosis and forced diuresis. As a competitive substrate for alcohol dehydrogenase, ethanol is antidotal. Given in the early stages of intoxication, it blocks the formulation of nephrotoxic metabolites. A therapeutically effective blood concentration of ethanol is in the range 100-150 mg/dl, and should be achieved by a rapid loading dose and maintained by intravenous infusion. For severe and/or deteriorating cases, hemodialysis may be required. Dialysis should be considered for patients who are symptomatic, have severe metabolic acidosis, a blood ethylene glycol concentration greater than 25 md/dl, or compromise of renal functions.

A more effective intravenous antidote for physician use is 4-methylpyrazole, a potent inhibitor of alcohol dehydrogenases, which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures, and renal failure have occurred. A generally recommended protocol is a loading dose of 15 mg/kg followed by 10 mg/kg every 12 hours for 4 doses and then 15 mg/kg every 12 hours until ethylene glycol concentrations are below 20 mg/100 ml. Slow intravenous infusion is required. Since 4-methyplyrozole is dialyzable, increased dosage may be necessary during hemodialysis. Additional therapeutic measures may include the administration of cofactors involved in the metabolism of ethylene glycol. Thiamine (100 mg) and pyridoxine (50 mg) should be given every six hours.
Pulmonary edema with hypoxemia has been described in a number of patients following poisoning with ethylene glycol. The mechanism of production has not been elucidated, but it appears to be non-cardiogenic in origin in several cases. Respiratory support with mechanical ventilation and positive end expiratory pressure may be required. There may be cranial nerve involvement in the late stages of toxicity from swallowed ethylene glycol. In particular, effects have been reported involving the seventh, eighth and ninth cranial nerves, presenting with bilateral facial paralysis, diminished hearing and dysphasia.

5. FIRE FIGHTING MEASURES

Flammable Properties:
Flash Point: 119°C (247°F)
Method Used: Set a flash
Auto-ignition Temperature: Auto-ignition temperature for ethylene glycol is 398°C (748°F).

Flammability Limits: Percentage of vapor concentration at which product can ignite in presence of spark:
Lower Flammability Limit: 3.2%
Upper Flammability Limit: 15.3%

Hazardous Combustion Products: Hazardous combustion products may include and are not limited to carbon monoxide, carbon dioxide and trace amounts of aldehydes and organic acids. When available oxygen is limited, as in a fire or when heated to very high temperatures by a hot wire or plate, carbon monoxide and other hazardous compounds such as aldehydes might be generated.

Extinguishing Media: Water fog or fine spray. Alcohol resistant foams (ATC type) are preferred if available. General purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively. Carbon dioxide. Dry chemical. Do not use direct water stream. May spread fire.

Fire Fighting Instructions: No fire and explosion hazards expected under normal storage and handling conditions (i.e. ambient temperatures). However, ethylene glycol or solutions of ethylene glycol and water can form flammable vapors with air if heated sufficiently. Keep people away. Isolate fire area and deny unnecessary entry.

Protective Equipment for Fire Fighters: Wear positive-pressure, self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire-fighting helmet, coat, pants, boots and gloves).

6. ACCIDENTAL RELEASE MEASURES

Protect People: Material is moderately toxic when ingested. Take adequate precautions to keep people, especially children away from spill site. PVC-coated rubber gloves and mono-goggles or face shield can be used during cleanup of spill site. Product on surfaces can cause slippery conditions. Practice reasonable care and cleanliness. Avoid breathing spray mists if generated. Keep out of reach of children. Product may become a solid at temperatures below -18°C (0°F). Do not store near food, foodstuffs, drugs or potable water supplies.

Protect the Environment: Do not dump used product or diluted material into sewers, on the ground, or into any body of water.

Cleanup: Small spills: Soak up with absorbent material. Large spills: Dike and pump into suitable containers for disposal. Ensure compliance with all applicable statues that require notification of appropriate government officials.

7. HANDLING AND STORAGE

Steps to be Taken in Case Material is Released or Spilled: Eliminate all sources of ignition in vicinity of the spilled or released fluid.

Other Precautions: Use normal precautions in handling any combustible liquid. Keep container closed when not in use. Store away from heat or open flame. Product on surfaces can cause slippery conditions. Practice reasonable care and cleanliness. Avoid breathing spray mists if generated. Keep out of reach of children. Product may become a solid at temperatures below -18°C (0°F). Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection: Respiratory protection is required if airborne concentration exceeds TLV. At any detectable concentration any self-contained breathing apparatus with a full face piece and operated in a pressure-demand or other positive pressure mode or any supplied-air respirator with a full face piece and operated in a pressure-demand or other positive pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive pressure mode.

Escape: Any air-purifying full face piece respirator (gas mask) with a chin-style or front- or back-mounted organic vapor canister or any appropriate escape-type self-contained breathing apparatus.

Skin Protection: Protective gloves recommended when prolonged skin contact cannot be avoided. Polyethylene; Neoprene; Nitrile; Polyvinyl alcohol; Natural Rubber, Butyl Rubber. Safety shower should be available.

Eye Protection: Safety goggles and face shield. Emergency eyewash should be available. Contact lenses should not be worn when working with this chemical.

Engineering Controls: Use general or local exhaust ventilation to meet TLV requirements.

EXPOSURE LIMITS

Component	Exposure Limits	Skin Form
Ethylene glycol	100 mg/m3 CEILING ACGIH	Aerosol
Ethylene glycol	125 mg/m3 CEILING OSHA-vacated	
	50 ppm CEILING OSHA – vacated	
	100 mg/m3 CEILING UCC	Aerosol and Vapor
Diethylene glycol	50 ppm TWA8 AIHA WEEL	Aerosol and Vapor
Diethylene glycol	10 mg/m3 TWA8 AIHA WEEL	Aerosol

In the Exposure Limits Chart above, if there is no specific qualifier (i.e., Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

A "blank" in the Skin column indicates that exposure by the cutaneous (skin) route is not a potential significant contributor to overall exposure.

9. PHYSICAL / CHEMICAL PROPERTIES

Boiling Point:	176°C (349°F)
Freeze Point:	-15°C (5°F)
Specific Gravity (Water =1):	1.12
Pounds/gallon	9.3
Vapor Pressure (mm of Hg) @ 20C:	<0.1
Vapor Density (air=1):	Not established
Water Solubility:	Complete
Evaporation Rate (BuAc = 1):	Nil
% Volatile By Volume:	90-97
Appearance:	Amber
Odor:	Mild
pH (50% Water Solution):	8.0

10. STABILITY & REACTIVITY DATA

Stability:	Stable
Conditions to Avoid:	Keep away from flame
Incompatibility (Materials to Avoid):	Strong acid or oxidizing agents
Hazardous Decomposition Products:	Incomplete combustion may produce CO gas
Hazardous Polymerization:	Will not occur

11. TOXICOLOGICAL INFORMATION

Skin: The dermal LD50 has not been determined.

Ingestion: The lethal dose in humans is estimated to be 100 ml (3 oz.). The oral LD50 for rats is in the 6000-13,000-mg/kg range.

Hydrated Inorganic Acid Sodium Salt: The lowest dose of a similar compound reported to produce death in humans was estimated to be 709 mg/kg body weight for a person weighing 150 pounds, this would be equivalent to swallowing about one-tenth (.1) of a pound of the dry material in a short period of time.

Acute oral LD50s for a similar compound = 2,650 mg/kg (rats) 2,000 mg/kg (mice)

Mutagenicity (The Effects on Genetic Material): In vitro mutagenicity studies were negative. Animal mutagenicity studies were negative.

Significant Data with Possible Relevance to Humans: Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations or doses. The no-effect doses for developmental toxicity for ethylene glycol given by gavage over the period of organogenesis has been shown to be 150 mg/kg/day for the mouse and 500 mg/kg/day for the rat. Also, in a preliminary study to assess the effects of exposure of pregnant rats and made to aerosis at concentrations of 150, 1000 and 25000 mg/m3 for 6 hours a day throughout the period of organogenesis, teratogenic effects were produced at the highest concentration, but only in mice. The conditions of these latter experiments did not allow a conclusion as to whether the developmental toxicity was mediated by inhalation of aerosol percutaneous absorption of ethylene glycol from contaminated skin, or swallowing ethylene glycol as a result of grooming the wetted coat. In a further study, comparing effects from high aerosol concentration by whole-body or nose-only exposure, it was shown that nose-only exposure resulted in maternal toxicity (1000 and 25000 mg/m3) and developmental toxicity with minimal evidence of teratogenicity (2500 mg/m3). The no-effects concentration (based on maternal toxicity) was 500 mg/m3. In a further study in mice, no teratogenic effects could be produced when ethylene glycol was applied to skin of pregnant mice over the period of organogenesis. The above observations suggest that ethylene glycol is to be regarded as an animal teratogen. There is currently no available information to suggest that ethylene glycol has caused birth defects in humans. Cutaneous application of ethylene glycol is ineffective in producing developmental toxicity. Exposure to high aerosol concentrations is only minimally effective in producing developmental toxicity. The major route for producing developmental toxicity is perorally. Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol causes dose-related increases in tumor incidence or a different pattern of tumors compared with untreated controls. The absence of carcinogenic potential for ethylene glycol has been supported by numerous in vitro genotoxicity studies showing that it does not produce mutagenic or clastogenic effects.

A chronic dietary feeding study of diethylene glycol with rats showed mild kidney injury at 1%, while concentrations of 2% and 4% caused more marked kidney injury. In addition, at 2% and 4% of diethylene glycol in the diet, some rats developed benign papillary tumors in the urinary bladder. These have been attributed to the presence of urinary bladder calcium oxalate stones. No evidence for carcinogenicity was found with a chronic skin-painting study with diethylene glycol in mice. The absence of a direct chemical carcinogenic effect addords with the results in vitro genotoxicity studies that show that it does not produce mutagenic or clastogenic effects. A feeding study employing up to 5.0% diethylene glycol in the diet failed to produce any teratogenic effects. In a mouse continuous breeding study with large doses of diethylene glycol in drinking water, there was evidence for reproductive toxicity at 3.5% (equivalent to 6.1 g/kg/day) as reduced number of litter, live pups per litter and live pup weight. No such effects were seen at 1.75% (approximately 3.05 g/kg/day). The relevance of these very high dosages to human health is uncertain. Pregnant rats receiving undiluted diethylene glycol by gavage over the period of organogenesis had toxic effects at 4.0 and 8.0 ml/kg/day as mortality, decreased body weight, decreased food consumption increased water consumption and increased liver and kidney weights. Fetotoxicity was seen only at these maternally toxic dosages. Decreased fetal body weight occurred at 8.0 ml/kg/day, and increased skeletal variants at 4.0 and 8.0 ml/kg/day. No embryotixic or teratogenic effects were seen. Neither maternal toxicity nor fetotoxicity occurred at 1.0 ml/kg/day. In a study with mice also receiving undiluted diethylene glycol over the period of organogenesis, maternal toxicity occurred at 2.5 and 10.0 ml/kg/day, but not at 0.5 ml/kg/day. Definitive developmental toxicity was not seen in this species.

ACUTE TOXICITY

Peroral: The lethal dose in humans is estimated to be 3 oz. or 100 ml.
Rat: LD50 (6000 – 13000) mg/kg

Percutaneous: Rabbit: LD50 = >22270 mg/kg; 24 h occluded

Inhalation: Rat: 8-hour exposure, substantially saturated vapor studies, dynamic generation method
Mortality: 0/6

Inhalation: Mist/vapor study, rat, at 170°C, 8-hour exposure = 2.2 mg/l
Mortality: 0/6

Inhalation: Rat: 8-hour exposure, fog = 10000 ppm; 65° - 70°C
Mortality: 0/6

IRRITATION

Skin: Rabbit: 24-hour occluded contact, 0.5 ml
Results: Minor erythema and edema

Skin: Human: Primary irritation patch test, 48-hour occluded, 0.2 ml
Results: Evidence of irritation

Eye: Rabbit: 0.1 ml
Results: Minor transient iritis, conjunctival irritation with discharge

REPEATED EXPOSURE

In a 7-day dietary study with rats, a significant increase in kidney weights in females was observed at 5.0 gm/kg. The NOEL was 2.5 gm/kg. In a 90-day dietary study with dogs, repeated exposures to 2.5 gm/kg resulted in acute renal failure and deaths. The NOAEL was 1.0 gm/kg.

In a 24-month dietary study with rats, increased mortality in males was observed at the highest dose, 1.0 gm/kg/day. There were multiple signs: mineralization of several organs, including the cardiac vessels, cardiac muscle, vas deferens, stomach and pulmonary vessels; cellular hyperplasia of the parathyroids, hemosiderosis of the spleen, myocardial fibrosis, portal fibrosis of the liver, bile duct hyperplasia and hydronephrosis and oxylate nephrosis of the kidneys. Ethylene glycol was not oncogenic.

SENSITIZATION (ANIMAL AND HUMAN STUDIES)

Repeated skin contact with ethylene glycol may, in a very small proportion of cases, cause sensitization with the development of allergic contact dermatitis. The incidence is significantly less than 1% with the undiluted material.

REPRODUCTIVE TOXICITY

A three-generation study indicated that ethylene glycol did not affect reproductive parameters at dietary concentrations up to 1.0 gm/kg/day in any generation.

CHRONIC TOXICITY AND CARCINOGENICITY

Two chronic feeding studies, using rats and mice, have not produced any evidence that ethylene glycol causes dose-related increases in tumor incidence or a different pattern of tumors compared with untreated controls. The absence of a carcinogenic potential for ethylene glycol has been supported by numerous in vitro genotoxicity studies showing that it does not produce mutagenic or clastogenic effects.

GENETIC TOXICOLOGY

In Vitro: Ethylene glycol was devoid of genotoxic activity in an Ames test, forward gene mutation and sister chromatid exchange (SCE) studies in Chinese Hamster Ovary (CHO) cells and an in vitro cytogenetics study.

In Vivo: Ethylene glycol by three different routes (intravenous, peroral and percutaneous) demonstrates apparent first-order pharmacokinetic behavior for the disposition in and the elimination from the plasma. Dose-dependent changes occur for the elimination of metabolites in the urine and as $14CO^2$ after single doses for the intravenous and peroral, but not the percutaneous route. The hypothesis from literature sources exists that developmental toxicity is caused by a metabolite of ethylene glycol, called glycolic acid, and not parent ethylene glycol. Under most conditions of ethylene glycol exposure, the glycolic acid metabolite is present in the blood in very low levels. However, it can become the major metabolite following large doses of ethylene glycol due to saturation of glycolic acid oxidation and/or elimination. When levels of this acidic metabolite exceed the capacity of maternal blood buffers to neutralize it, a maternal metabolic acidosis ensues, which has been hypothesized to be the true agent responsible for ethylene glycol induced developmental toxicity. Research suggests that ethylene glycol developmental toxicity is due to a dose-rate dependent toxicokinetic shift leading to glycolate accumulation and metabolic acidosis.

ADDITIONAL STUDIES

Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice when given by gavage or in drinking water at high concentrations or doses. The no-effect doses for developmental toxicity for ethylene glycol given by gavage over the period of organogenesis has been shown to be 150 mg/kg/day for the mouse and 500 mg/kg/day for the rat. Also, in a preliminary study to assess the effects of exposure of pregnant rats and mice to aerosols at concentrations of 150, 1000 and 2500 mg/m^3 for 6 hours a day throughout the period of organogenesis, teratogenic effects were produced at the highest concentration, but only in mice. The conditions of these latter experiments did not allow a conclusion as to whether the developmental toxicity was mediated by inhalation of aerosol, percutaneous absorption of ethylene glycol from contaminated skin, or swallowing of ethylene glycol as a result of grooming the wetted coat. In a further study, comparing effects from high aerosol concentration by whole-body or nose-only exposure, it was shown that nose-only exposure resulted in maternal toxicity (1000 and 2500 mg/m^3) and developmental toxicity with minimal evidence of teratogenicity (2500 mg/m^3). The no-effects concentration (based on maternal toxicity) was 500 mg/m^3. In a further study in mice, no teratogenic effects could be produced when ethylene glycol was applied to the skin of pregnant mice over the period of organogenesis. The above observations suggest that ethylene glycol is to be regarded as an animal teratogen. There is currently no available information to suggest that ethylene glycol has caused birth defects in humans. Cutaneous application of ethylene glycol is ineffective in producing developmental toxicity. Exposure to high aerosol concentrations is only minimally effective in producing developmental toxicity.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE

Movement & Partitioning: Bioconcentration potential is low (BCF less than 100 or Log Kow less than 3). Log octanol/water partition coefficient (log Kow) is -1.36. Henry's Law Constant (H) is 6.0E-08 atm-m3/mol. Bioconcentration factor (BCF) is 10 in golden orfe.

Degradation & Transformation: Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD greater than 40%). 5-Day biochemical oxygen demand (BOD5) is 0.78 p/p. 10-Day biochemical oxygen demand (BOD10) is 1.06 p/p. 20-Day biochemical oxygen demand (BOD20) is 1.15 p/p. Theoretical oxygen demand (THOD) is calculated to be 1.29 p/p. Biodegradation may occur under both aerobic and anaerobic conditions (in either the presence or absence of oxygen). Inhibitory concentration (IC50) in OECD "Activated Sludge, Respiration Inhibition Test" (Guideline # 209) is < 1000 mg/L. Degradation is expected in the atmospheric environment within days to weeks.

Ecotoxicology: Material is practically non-toxic to aquatic organisms on an acute basis (LC50 greater than 100 mg/L in most sensitive species). Acute LC50 for fathead minnow (Pimephales promelas) is 51000 mg/L. Acute LC50 for bluegill (Lepomis macrochirus) is 27549 mg/L. Acute LC50 for rainbow trout (Oncorhynchus mykiss) is about 18000-46000 mg/L. Acute LC50 for guppy (Poecilia reticulata) is 49300 mg/L. Acute LC50 for water flea (Daphnia magna) is 46300-51100 mg/L. Acute LC50 for the cladoceran Ceriodaphnia dubia is 10000-25800 mg/L. Acute LC50 for crayfish is 91430 mg/L. Acute LC50 for brine shrimp (Artemia salina) is 20000 mg/L. Acute LC50 for golden orfe (Leuciscus idus) is greater than 10000 mg/L. Acute LC50 for goldfish (Carassius auratus) is greater than 5000 mg/L. Growth inhibition EC50 for green alga Selenastrum capricornutum is 9500-13000 mg/L.

BOD (% Oxygen Consumption):

Day 5	Day 10	Day 15	Day 20	Day 30
51%	80%		97%	

ECOTOXICITY

Toxicity to Micro-organisms: Bacterial / NA: 16 h; IC50
Result Value: >10000 mg/l

Toxicity to Aquatic Invertebrates: Daphnia: 48 h; LC50
Result Value: >100000 mg/l

Toxicity to Fish: Fathead Minnow: 94 h; LC50
Result Value: 70000 mg/l

FURTHER INFORMATION

Chemical Oxygen Demand (COD) – Measured: 1.29 mg/mg
Theoretical Oxygen Demand (THOD) – Calculated: 1.30 mg/mg
Octanol/Water Partition Coefficient – Measured: -1.36

13. DISPOSAL CONSIDERATIONS

DO NOT discharge to sewer. Wear appropriate personal protection. Take up with sand, vermiculite, or similar inert material. Dispose in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

Non-Bulk: Not regulated by the US D.O.T. (in quantities under 5,000 lbs in any one inner package)

Bulk:

Proper Shipping Name:	Environmentally Hazardous Substance, LIQUID N.O.S. (ETHYLENE GLYCOL)
Technical Name:	ETHYLENE GLYCOL
ID Number:	UN 3082
Hazard Class:	9
Packing Group:	PG III
Reportable Quantity:	5,000 lb.

IATA

Non-Bulk: Not Regulated by IATA

IMDG

Non-Bulk: Not regulated by IMDG (in quantities under 5,000 lbs in any one inner package)

15. REGULATORY INFORMATION

THIS PRODUCT CONTAINS COMPONENT(S) CITED ON THE FOLLOWING REGULATIONS.

	Chemical Name	*Cas Number*
	Ethylene Glycol	107-21-1

United States - TSCA Inventory: Listed

Water Standards: No data available

Atmospheric Standards: Clean Air Act (1990) - List of Hazardous Air Contaminants: listed

CERCLA: Reportable Quantity (RQ): 5,000 pounds (532 gallons)

OSHA Hazard Communication Standard: This product is a "hazardous chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III:

Section 311/312 - Categories: Acute hazard; chronic hazard

Section 312 - Inventory Reporting: Ethylene glycol is subject to Tier I and/or Tier II annual inventory reporting.

Section 313 - Emission Reporting: Ethylene glycol is subject to Form R reporting requirements.

Section 302 - Extremely Hazardous Substances: Ethylene glycol is not listed.

State Right-To-Know:

California - Exposure Limits - Ceilings:	vapor-50 ppm ceiling; 125 mg/m3 ceiling
Director's List of Hazardous Substances:	listed
Florida - Hazardous Substances List:	listed
Massachusetts - Right-to-Know List:	listed
Minnesota - Haz. Subs. List:	listed (particulate and vapor)
New Jersey - Right-to-Know List (Total):	Present greater than 1.0%
Pennsylvania Right-to-Know List:	environmental hazard

Canadian Regulations: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required.

WHMIS Information: D2A - material has potential toxic effects. Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): The normal consumer use of this product does not result in exposure to chemicals known to the state of California to cause Cancer and/or reproductive harm above the significant risk level for carcinogens or the maximum allowable dose levels for reproductive toxins. Warnings are not required for consumer packaging. However, industrial or other occupational use of this product at higher frequency and using larger quantities of this product may result in exposures exceeding these levels and are labeled accordingly.

California SCAQMD Rule 443.1 (South Coast Air Quality Management District Rule 443.1, Labeling of Materials Containing Organic Solvents):

VOC: Vapor pressure 0.06 mmHg at 20°C
1113.38 g/l

16. OTHER INFORMATION

Contact: Thomas Cholke Phone: (847) 559-2225

Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this MSDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Phenomenal Brands

Material Safety Data Sheet

PHENOPATCH

24 Hour Emergency Phone Numbers:
Medical/Poison Control: 1-800-327-3874
1-513-558-5111
Transportation/National Response Center:
1-800-535-5053
1-352-323-3500

NOTE: The National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

IMPORTANT: Provide this information to employees, customers, and users of this product. Read this MSDS before handling or disposing of this product. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard. All abbreviated terms used in this MSDS are further described in Section 16.

Section 1 - Chemical Product / Company Information

This Material Safety Data Sheet is available in Canadian French and Hispanic American Spanish upon request.
On peut demader cette fiche signalétique (MSDS) a la alngue francaise-canadienne.
Los Datos de Serguridad del Producto pueden obtenerse en Espanol si lo riquiere.

Product Name: Phenopatch Pre-Mixed Concrete Patch
Product UPC Number: 070798326118, 070798326170
Product Use/Class: Ready To Use Concrete Repair/Floor Preperation
Manufacturer: **PHENOMENAL BRANDS**
Phenopatch Products
A Division of DAP Products Inc.
2400 Boston Street Suite 200
Baltimore, MD 21224-4723
410-779-3265 (non-emergency matters)

Revision Date: 08/16/2007
Supercedes: 02/09/2006
MSDS Number: 00079935005

Section 2 - Hazards Identification

Emergency Overview: A gray paste product with a slight odor. WARNING! May cause eye, skin, nose, throat and respiratory tract irritation. Harmful if swallowed or absorbed through the skin. This product contains ethylene glycol.

Refer to other MSDS sections for other detailed information.

Effects Of Overexposure - Eye Contact: May cause eye irritation.

Effects Of Overexposure - Skin Contact: Harmful if absorbed through the skin. Prolonged or repeated contact with skin may cause irritation. May cause dry skin.

Effects Of Overexposure - Inhalation: Harmful if inhaled. Inhalation may cause irritation to the respiratory tract (nose, mouth, mucous membranes).

Effects Of Overexposure - Ingestion: Harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: Repeated or prolonged exposure may cause respiratory system damage.

Prolonged and repeated skin contact may cause irritation and possibly dermatitis.

The International Agency for Research on Cancer (IARC) has determined that crystalline silica in the form of quartz or cristobalite that is inhaled from occupational sources is carcinogenic to humans (Group 1- carcinogenic to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (published in June 1997) in conjunction with the use of these materials. The National Toxicology Program (NTP) classifies respirable crystalline silica as "known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial

Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (Group A2).
Breathing dust containing respirable crystalline silica may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may have the following serious chronic health effects: Excessive inhalation of respirable dust can cause pneumoconiosis, a respiratory disease, which can result in delayed, progressive, disabling and sometimes fatal lung injury. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. Smoking exacerbates this disease. Individuals with pneumoconiosis are predisposed to develop tuberculosis. There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by fibrosis of the lungs, skin and other internal organs) and kidney disease. Overexposure may cause kidney, cardiovascular, skin and liver damage.

Ethylene Glycol may cause kidney and liver damage upon prolonged and repeated overexposures. Studies have shown that repeated inhalation of ethylene glycol has produced adverse cardiovascular changes in laboratory animals. Ethylene glycol has been shown to cause birth defects in laboratory animals.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation

Medical Conditions which May be Aggravated by Exposure: Asthma and asthma-like conditions may worsen from prolonged and repeated exposure.

Carcinogenicity:

CAS No.	Chemical Name	ACGIH	OSHA	IARC	NTP
14808-60-7	Silica, crystalline	Suspected human carcinogen.	Not Listed.	Human carcinogen.	Known carcinogen.

Section 3 - Composition / Information On Ingredients

Chemical Name	CASRN	Wt%
Silica, crystalline	14808-60-7	30-60
Limestone	1317-65-3	15-40
Ethylene glycol	107-21-1	0.5-1.5

Section 4 - First Aid Measures

First Aid - Eye Contact: In case of contact, immediately flush eyes with large quantities of water for at least 15 minutes until irritation subsides. Get medical attention immediately.

First Aid - Skin Contact: Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing.

First Aid - Inhalation: If inhaled, remove to fresh air. If breathing is difficult, leave the area to obtain fresh air. If continued breathing difficulty is experienced, get medical attention immediately.

First Aid - Ingestion: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately.

Note to Physician: None.

COMMENTS: Call Medical Emergency at 1-800-327-3874 if any irritation or complication arises from any of the above routes of entry.

ection 5 - Fire Fighting Measures

Extinguishing Media: Alcohol, Carbon Dioxide, Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: No special protective measures against fire required.

Special Firefighting Procedures: Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear. Use water spray to cool exposed surfaces.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Wear proper protective equipment as specified in Section 8. Use absorbent material or scrape up dried material and place in container.

Section 7 - Handling And Storage

Handling: KEEP OUT OF REACH OF CHILDREN! DO NOT TAKE INTERNALLY. Avoid breathing vapor and contact with eyes, skin and clothing. Use only with adequate ventilation. Ensure fresh air entry during application and drying. Do not inhale dusts of this product. While dry sanding, use of a NIOSH-approved dust mask is recommended. Removal of this product after use will result in the generation of Dust. If dry-sanded, exposure to dust may result in the build-up of material in eyes, ears, nose, and mouth which may cause irritation. Wash thoroughly after handling.

Storage: Do not store at temperatures above 120 degrees F. Store containers away from excessive heat and freezing. Close container after each use. Store away from caustics and oxidizers.

Section 8 - Exposure Controls / Personal Protection

Chemical Name	CASRN	ACGIH TWA	ACGIH STEL	ACGIH CEIL	OSHA TWA	OSHA STEL	OSHA CEIL	Skin
Silica, crystalline	14808-60-7	0.05 MGM3	N.E.	N.E.	10/(%SiO2 + 2) MGM3	N.E.	N.E.	No
Limestone	1317-65-3	10 MGM3	N.E.	N.E.	5 MGM3 (respirable fraction)	N.E.	N.E.	No
hylene glycol	107-21-1	N.E.	N.E.	100 MGM3	N.E.	N.E.	N.E.	No

Exposure Notes:

14808-60-7 The 2002 ACGIH Threshold Limit Values for Chemical Substances and Physical Agents lists the median Respirable Particulate Mass (RPM) point for crystalline silica at 4.0 microns in terms of the particle's aerodynamic diameter.

The TLVs for crystalline silica represent the respirable fraction.

OSHA PEL TWA for Quartz is calculated using the following formula: 10 mg/m3/(% SiO2 + 2). Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size selector with the following characteristics.

..... Aerodynamic diameter (unit density sphere)	Percent passing selector
2	90
2.5	75
3.5	50
5.0	25
10	0

Precautionary Measures: Please refer to other sections and subsections of this MSDS.

Engineering Controls: Good general ventilation should be sufficient to control airborne levels. Ensure adequate ventilation, especially in confined areas. Local ventilation of emission sources may be necessary to maintain ambient concentrations below recommended exposure limits. If dry-sanding, provide sufficient mechanical ventilation to maintain exposure below PEL and TLV. Wet sanding is recommended to avoid generation of dust.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. A NIOSH-approved air purifying respirator with an organic vapor cartridge or canister may be necessary under certain circumstances where

airborne concentrations are expected to exceed exposure limits. A respiratory protection program that meets the OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Use an approved NIOSH/OSHA respirator if dry sanded.
National Institute for Occupational Safety and Health (NIOSH) has recommended that the permissible exposure limit be changed to 50 micrograms respirable free silica per cubic meter of air (0.05 mg/m3) as determined by a full shift sample up to 10-hour work shift.

Skin Protection: Rubber gloves.

Eye Protection: Goggles or safety glasses with side shields.

Other protective equipment: Not required under normal use.

Hygienic Practices: Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing before re-use.

Important: Listed Permissible Exposure Levels (PEL) are from the U.S. Dept. of Labor OSHA Final Rule Limits (CFR 29 1910.1000); these limits may vary between states.

Note: An employee's skin exposure to substances having a "YES" in the "SKIN" column in the table above shall be prevented or reduced to the extent necessary under the circumstances through the use of gloves, coveralls, goggles or other appropriate personal protective equipment, engineering controls or work practices.

Section 9 - Physical And Chemical Properties

Boiling Range:	Not Established	**Vapor Density:**	Heavier Than Air
Odor:	Slight	**Odor Threshold:**	Not Established
Color:	Gray	**Evaporation Rate:**	Slower Than n-Butyl Acetate
Solubility in H2O:	Not Established	**Specific Gravity:**	1.8
Freeze Point:	Not Established	**pH:**	Between 7.0 and 12.9
Vapor Pressure:	Not Established	**Viscosity:**	Not Established
Physical State:	Paste	**Flammability:**	Non-Flammable
Flash Point, F:	Greater than 200 degrees	**Method:**	(Seta Closed Cup)
Lower Explosive Limit, %:	Not Established	**Upper Explosive Limit, %:**	Not Established

When reported, vapor pressure of this product has been calculated theoretically based on its constituent makeup and has not been determined experimentally.

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Excessive heat and freezing.

Incompatibility: Incompatible with strong bases and oxidizing agents.

Hazardous Decomposition Products: Normal decomposition products, i.e., COx, NOx.

Hazardous Polymerization: Hazardous polymerization will not occur under normal conditions.

Stability: Stable under recommended storage conditions.

Section 11 - Toxicological Information

Product LD50: Not Established **Product LC50:** Not Established

CASRN	Chemical Name	LD50	LC50
107-21-1	Ethylene glycol	Rat:4700 mg/kg	Rat:10876 mg/kg

Significant Data with Possible Relevance to Humans: None.

Section 12 - Ecological Information

Ecological Information: Ecological injuries are not known or expected under normal use.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance with all federal, state and local regulations. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste.

EPA Waste Code if Discarded (40 CFR Section 261): None.

Section 14 - Transportation Information

DOT Proper Shipping Name:	Not Regulated	**Packing Group:**	N.A.
DOT Technical Name:	N.A.	**Hazard Subclass:**	N.A.
DOT Hazard Class:	N.A.	**DOT UN/NA Number:**	None

Note: The shipping information provided is applicable for domestic ground transport only. Different categorization may apply if shipped via other modes of transportation and/or to non-domestic destinations.

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category:

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Immediate Health Hazard, Chronic Health Hazard

SARA Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

None.

Toxic Substances Control Act:

All ingredients in this product are either on TSCA inventory list, or otherwise exempt.

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

None.

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product:

Chemical Name	CAS Number
Non-Hazardous Polymer	Proprietary
Water	7732-18-5

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%:

Chemical Name	CAS Number
Non-Hazardous Polymer	Proprietary
Water	7732-18-5

California Proposition 65:

WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16 - Other Information

HMIS Ratings:

Health: 1 Flammability: 1 Reactivity: 0 Personal Protection: X

Volatile Organic Compounds (VOC), less water less exempts: g/L: 60.9 lb/gal: 0.5 wt:wt%: 2.6

Volatile Organic Compounds (VOC), less water less exempts, less LVP-VOCs: wt:wt%: 0.1

REASON FOR REVISION: Periodic Update

Legend:

N.A. – Not Applicable

N.E. – Not Established

N.D. – Not Determined

VOC – Volatile Organic Compound

PEL – Permissible Exposure Limit

TLV – Threshold Limit Value

CEIL – Ceiling Exposure Limit

LD50 – Lethal Dose 50

F – Degree Fahrenheit

C – Degree Celsius

ACGIH – American Conference of Governmental Industrial Hygienists

SARA – Superfund Amendments and Reauthorization Act of 1986

NJRTK – New Jersey Right-to-Know Law

OSHA – Occupational Safety and Health Administration

HMIS – Hazardous Materials Identification System

NTP – National Toxicology Program

STEL – Short Term Exposure Limit

LC50 – Lethal Concentration 50

MSDS – Material Safety Data Sheet

CASRN – The Chemical Abstracts Service Registry Number

PHENOMENAL BRANDS believes the data and statements contained herein are accurate as of the date hereof. They are offered in good faith as typical values and not as a product specification. **NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS.** Since this document is intended only as a guide to the appropriate use and precautionary handling of the referenced product by a properly trained person, it is therefore the responsibility of the user to (i) review the recommendations with due consideration for the specific context of the intended use and (ii) determine if they are appropriate.

<End of MSDS>

CUSTOMER: 442253
ORDER #: 957608
BATCH #: 123210016
STICKER #: 123210096
ZONE #:102
BARCODE #:80412301 0002
PRODUCT NAME: PIT BOSS

Material Safety Data Sheet: PIT BOSS

Supercedes Date 12/28/2006 **Issuing Date** 02/26/2009

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name PIT BOSS
Product Code 0894
Recommended Use Use in drains Emulsifier Flow improver
Chemical Nature Hydrocarbon

Information on Manufacturer
CHEMSEARCH FE DIV. OF NCH CORP.
BOX 152170
IRVING, TX 75015

Emergency Telephone Number
CHEMTREC ® 800-424-9300

2. HAZARDS IDENTIFICATION

Emergency Overview
Warning
Combustible liquid and vapor
Severe eye irritation
Causes skin irritation
May cause allergic skin reaction
May be harmful if inhaled
Harmful or fatal if swallowed

Color Red **Physical State** Liquid **Odor** Cherry

Potential Health Effects	
Principle Route of Exposure	Inhalation, Skin contact, Eye contact.
Primary Routes of Entry	Skin Absorption, Inhalation.
Acute Effects	
Eyes	Severe eye irritant.
Skin	Causes skin irritation. May cause allergic skin reaction.
Inhalation	May cause irritation of respiratory tract. May cause central nervous system depression. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting, and diarrhea. Aspiration hazard if swallowed - can enter lungs and cause damage. May be fatal if swallowed and enters airways.
Chronic Effects	Prolonged skin contact may defat the skin and produce dermatitis. May cause sensitization by skin contact.
Target Organ Effects	Eyes, Skin, Respiratory system, Central nervous system, Kidney, Bone Marrow.
Aggravated Medical Conditions	Allergies. Skin disorders. Respiratory disorders. Neurological disorders.
Potential Environmental Effects	See Section 12 for additional Ecological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS-No
1-Tetradecene	1120-36-1
Terpene hydrocarbons, n.o.s.	68956-56-9
Alcohols, C 12-14 secondary, ethoxylated	84133-50-6
Proprietary fragrance	TRADE SECRET

4. FIRST AID MEASURES

General Advice	Avoid contact with skin, eyes, and clothing. Avoid breathing vapors, mist, or gas.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before re-use.
Inhalation	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
Ingestion	Drink 1 or 2 glasses of water. Do NOT induce vomiting. Get medical attention immediately. Never give anything by mouth to an unconscious person.
Notes to Physician	Aspiration hazard if swallowed - can enter lungs and cause damage.

5. FIRE-FIGHTING MEASURES

Flash Point 164°F / 73°C **Method** Seta closed cup
Autoignition Temperature No information available..
Flammability Limits in Air % Mixture. Upper 6.1 Lower 0.3
Suitable Extinguishing Media
Water spray. Carbon dioxide (CO2). Foam. Dry chemical.
Specific Hazards Arising from the Chemical
Solvent vapors are heavier than air and may spread along floors. Vapors may ignite and explode. Material can create slippery conditions.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA	**Health**	2	**Flammability**	2	**Instability**	0
HMIS	**Health**	2	**Flammability**	2	**Instability**	0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Avoid contact with skin, eyes, and clothing. Remove all sources of ignition. Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions	Prevent further leakage or spillage if safe to do so.
Methods for Containment	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Methods for Cleaning Up Pick up and transfer to properly labeled containers.
Neutralizing Agent Not applicable.

7. HANDLING AND STORAGE

Handling Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges.
Storage Keep container tightly closed in a dry and well-ventilated place.
Storage Temperature **Minimum** 35°F / 2°C **Maximum1** 20°F / 49°C
Storage Conditions **Indoor** X **Outdoor** **Heated** **Refrigerated**

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH
1-Tetradecene	No data available	no data available	no data available
Terpene hydrocarbons, n.o.s.	No data available	no data available	no data available
Alcohols, C 12-14 secondary, ethoxylated	No data available	no data available	no data available
Proprietary fragrance	No data available	no data available	no data available

Engineering Measures Use with local exhaust ventilation. Ensure adequate ventilation, especially in confined areas.
Personal Protective Equipment
Eye/Face Protection Safety glasses with side-shields.
Skin Protection Impervious gloves.
Respiratory Protection In case of insufficient ventilation wear suitable respiratory equipment.
General Hygiene Considerations Wear protective gloves/clothing. Ensure that eyewash stations and safety showers are close to the workstation location. Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid	**Viscosity**	Non viscous
Color	Red	**Odor**	Cherry
Appearance	Transparent	**pH**	Not applicable
Specific Gravity	0.805	**Evaporation Rate**	0.04 (Butyl acetate=1)
Percent Volatile (Volume)	95.5	**VOC Content (%)**	94.7
VOC Photoreactive (Y/N)	Yes	**VOC Content (g/l)**	763
Vapor Pressure	0.68 mmHg @ 70 °F	**Vapor Density**	4.9 (Air = 1.0)
Solubility	Negligible	**Boiling Point/Range**	425°F / 218°C

10. STABILITY AND REACTIVITY

Chemical Stability Stable under normal conditions. Hazardous polymerization does not occur.
Conditions to Avoid Keep away from open flames, hot surfaces, and sources of ignition.
Incompatible Products Strong oxidizing agents. Strong acids. Strong bases.
Hazardous Decomposition Products Carbon oxides, Hydrocarbons.
Possibility of Hazardous Reactions None under normal processing..

11. TOXICOLOGICAL INFORMATION

Product Information No information available.

Component Information
Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation	Draize Test	Other
1-Tetradecene	10000 mg/kg (Rat)	10000 mg/kg (Rabbit)	no data available	no data available	no data available
Terpene hydrocarbons, n.o.s.	no data available	no data available	no data available	no data available	no data available
Alcohols, C 12-14 secondary, ethoxylated	no data available	no data available	no data available	no data available	no data available
Proprietary fragrance	no data available	no data available	no data available	no data available	no data available

Chronic Toxicity

Component	Mutagenicity	Sensitization	Developmental Toxicity	Reproductive Toxicity	Target Organ Effects
1-Tetradecene	no data available	no data available	no data available	no data available	no data available
Terpene hydrocarbons, n.o.s.	no data available	Skin sensitization	no data available	no data available	CNS, Kidney, Bone marrow
Alcohols, C 12-14 secondary, ethoxylated	no data available	Skin sensitization	no data available	no data available	Bone Marrow
Proprietary fragrance	no data available	no data available	no data available	no data available	Central nervous system

Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Other
1-Tetradecene	not applicable	not applicable	not applicable	not applicable	not applicable
Terpene hydrocarbons, n.o.s.	not applicable	not applicable	not applicable	not applicable	not applicable
Alcohols, C 12-14 secondary, ethoxylated	not applicable	not applicable	not applicable	not applicable	not applicable
Proprietary fragrance	not applicable	not applicable	not applicable	not applicable	not applicable

12. ECOLOGICAL INFORMATION

Product Information No information available.

Component Information

Component	Toxicity to Algae	Toxicity to Fish	Microtox	Water Flea	log Pow
1-Tetradecene	no data available	no data available	EC50 > 10000 mg/L 6 h	no data available	N/A
Terpene hydrocarbons, n.o.s.	no data available	no data available	no data available	no data available	N/A
Alcohols, C 12-14 secondary, ethoxylated	no data available	LC50= 3.2 mg/L Pimephales promelas 96 h	no data available	EC50 = 3.2 mg/L 48 h	N/A
Proprietary fragrance	no data available	no data available	no data available	no data available	N/A

Persistence and Degradability No information available.
Bioaccumulation No information available.
Mobility No information available.

13. DISPOSAL CONSIDERATIONS

Product Disposal Dispose of in accordance with local regulations.
Container Disposal Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	<130gals NOT REGULATED >130 gals; Terpene hydrocarbons, n.o.s.
Hazard Class	3
UN-No	UN2319
Packing Group	III
Description	Terpene hydrocarbons, n.o.s.,3,UN2319,PG III

TDG

Proper shipping name	Terpene hydrocarbons, n.o.s.
Hazard Class	3
UN-No	UN2319
Packing Group	III
Description	TERPENE HYDROCARBONS, N.O.S.,3,UN2319,PG III

ICAO

UN-No	UN2319
Proper Shipping Name	Terpene hydrocarbons, n.o.s.
Hazard Class	3
Packing Group	III
Shipping Description	Terpene hydrocarbons, n.o.s.,3,UN2319,PG III

IATA

UN-No	UN2319
Proper Shipping Name	Terpene hydrocarbons, n.o.s.
Hazard Class	3
Packing Group	III
ERG Code	3L
Shipping Description	UN2319,Terpene hydrocarbons, n.o.s.,3,PG III

IMDG/IMO

Proper Shipping Name	Terpene hydrocarbons, n.o.s.
Hazard Class	3
UN-No	UN2319
Packing Group	III
EmS No.	F-E, S-D
Shipping Description	UN2319, Terpene hydrocarbons, n.o.s.,3,PG III

15. REGULATORY INFORMATION

Inventories
TSCA Complies
DSL Complies

U.S. Federal Regulations
SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and and Title 40n of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Chronic Health Hazard	Fire Hazard	Sudden Release of Pressure Hazard	Reactive Hazard
Yes	Yes	Yes	No	No

CERCLA

Component	Hazardous Substances RQs	CERCLA EHS RQs
1-Tetradecene	Not applicable	Not applicable
Terpene hydrocarbons, n.o.s.	Not applicable	Not applicable
Alcohols, C 12-14 secondary, ethoxylated	Not applicable	Not applicable
Proprietary fragrance	Not applicable	Not applicable

U.S. State Regulations
California Proposition 65 This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65
1,4-Dioxane	123-91-1	carcinogen, initial date 1/1/88
Acetaldehyde	75-07-0	carcinogen, initial date 4/1/88
Ethylene oxide	75-21-8	carcinogen, initial date 7/1/87 female reproductive toxicity, initial date 2/27/87

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.
WHMIS Hazard Class
B3 Combustible liquid, D2B Toxic materials.

16. OTHER INFORMATION

Prepared By Kristen Stansbury
Supercedes Date 12/28/2006
Issuing Date 02/26/2009
Reason for Revision No information available.

Glossary	No information available.
List of References.	TBD

CHEMSEARCH FE DIV. OF NCH CORP. assumes no responsibility for personal injury or property damage caused by the use, storage, or disposal of the product in a manner not recommended on the product label. Users assume all risks associated with such unrecommended use, storage or disposal of the product. The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : PLASTIC WOOD
UPC NUMBER : 7079821500, 7079821502, 7079821504, 7079821506, 7079821508, 7079821400, 7079821404, 7079821408, 7079821420, 7079821424, 7079821430, 7079821434, 7079821144, 7079821412
PRODUCT USE/CLASS : Wood Filler

MANUFACTURER:
DAP INC.
2400 BOSTON STREET
BALTIMORE, MD 21224

24 HOUR EMERGENCY:
TRANSPORTATION: 1-800-535-5053 (352-323-3500)
MEDICAL : 1-800-327-3874 (513-558-5111)

PREPARE DATE: 3/9/2001
REVISION NO.: 4
REVISION DATE: 3/3/2004

GENERAL INFORMATION:
DAP INC. : 1-888-DAP-TIPS (1-888-327-8477)

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % RANGE
01	Calcium carbonate	1317-65-3	30-60
02	Acetone	67-64-1	15-40
03	Cellulose	9004-34-6	7-13
04	n-Butyl acetate	123-86-4	5-10
05	Cellulose nitrate	9004-70-0	1-5
06	Isopropyl alcohol	67-63-0	1-5

EXPOSURE LIMITS

	ACGIH			OSHA			COMPANY
ITEM	ACGIH TWA	ACGIH STEL	ACGIH CEIL	OSHA TWA	OSHA STEL	OSHA CEIL	Skin
01	10 MGM3	N.E.	N.E.	5 MGM3	N.E.	N.E.	No
02	500 PPM	750 PPM	N.E.	1000 PPM	N.E.	N.E.	No
03	10 MGM3	N.E.	N.E.	5 MGM3	N.E.	N.E.	No
04	150 PPM	200 PPM	N.E.	150 PPM	N.E.	N.E.	No
05	N.E.	N.E.	N.E.	N.E.	N.E.	N.E.	No
06	200 PPM	400 PPM	N.E.	400 PPM	N.E.	N.E.	No

(See Section 16 for abbreviation legend)

Remaining ingredients are not considered hazardous per the OSHA Hazard Communication Standard.

Listed Permissible Exposure Levels (PEL) are from the U.S. Dept. of Labor OSHA Final Rule Limits (CFR 29 1910.1000); limits may vary between states.

(Continued on Page 2)

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! Extremely flammable liquid and vapor. Vapor may ignite explosively. Vapor may cause flash fire. Vapor harmful. Harmful or fatal if swallowed. Removal of this product after use will result in the generation of dust. If dry-sanded, exposure to dust may result in build-up of material in eyes, ears, nose, and mouth which may cause irritation.

POTENTIAL HEALTH EFFECTS:

EFFECTS OF OVEREXPOSURE - EYE CONTACT: May cause eye irritation.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: May cause skin irritation.

EFFECTS OF OVEREXPOSURE - INHALATION: Vapor harmful if inhaled. May cause irritation. May cause dizziness, headache or nausea.

EFFECTS OF OVEREXPOSURE - INGESTION: This material may be harmful or fatal if swallowed. If ingested this product may cause vomiting, diarrhea, and depressed respiration.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: Reports have associated permanent brain and nervous system damage with prolonged and repeated occupational overexposure to solvents. Prolonged or repeated contact with skin can cause defatting of the skin which may lead to dermatitis. Inhalation of dust may result in pulmonary and respiratory damages.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY CONTACT: None known.

PRIMARY ROUTE(S) OF ENTRY: SKIN CONTACT INHALATION

SECTION 4 - FIRST AID MEASURES

EYE CONTACT: Flush with large quantities of water until irritation subsides.

SKIN CONTACT: Wash with soap and water.

INHALATION: Remove to fresh air.

INGESTION: DO NOT INDUCE VOMITING.

COMMENTS: Call 1-800-327-3874 if irritation persists or complications arise from any of the above exposures.

(Continued on Page 3)

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: <20 F
(SETAFLASH CLOSED CUP)

LOWER EXPLOSIVE LIMIT: N.A.
UPPER EXPLOSIVE LIMIT: N.A.

AUTOIGNITION TEMPERATURE: N.E.

EXTINGUISHING MEDIA: CO2 DRY CHEMICAL FOAM

UNUSUAL FIRE AND EXPLOSION HAZARDS: Extremely Flammable. Material will readily ignite at room temperatures. Containers may explode if exposed to extreme heat. Eliminate sources of ignition: heat, electrical equipment, sparks, and flames. Do not put in contact with oxidizing or caustic materials.

SPECIAL FIREFIGHTING PROCEDURES: Full protective equipment, including self-contained breathing apparatus, is recommended to protect from combustion products. Cool exposed containers with water.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: Scrape up dried material and place into containers.

SECTION 7 - HANDLING AND STORAGE

HANDLING INFORMATION: KEEP OUT OF REACH OF CHILDREN. Avoid skin and eye contact. Avoid breathing vapors. Use only in a well ventilated area.

STORAGE INFORMATION: Store away from caustics and oxidizers. Keep containers tightly closed when not in use. Keep containers from excessive heat and freezing. Do not store at temperatures above 120 degrees F.

OTHER PRECAUTIONS: Intentional misuse by deliberately concentrating and inhaling vapors may be harmful or fatal. Do not take internally.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide sufficient mechanical ventilation (local or general exhaust) to maintain exposure below PEL and TLV. Vapors are heavier than air and will collect in low areas. Check all low areas (basements, sumps, etc.) for vapor before entering. Provide eyewash and solvent impervious apron if body contact may occur.

(Continued on Page 4)

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: If 8 hour exposure limit or value is exceeded for any component, use an approved NIOSH/OSHA respirator. Consult your safety equipment supplier and the OSHA regulation, 29 CFR 1910.134 for respirator

requirements. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

EYE PROTECTION: Goggles or safety glasses with side shields.

SKIN PROTECTION: Solvent impervious gloves.

OTHER PROTECTIVE EQUIPMENT: Provide eyewash and solvent impervious apron if body contact may occur.

HYGIENIC PRACTICES: Wash contaminated clothing before reuse. Remove contaminated clothing and wash before reuse. Use only in a well ventilated area.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE	: N.E.	VAPOR DENSITY	: Is heavier than air
ODOR	: Strong solvent		
APPEARANCE	: Wood paste	EVAPORATION RATE	: Is faster than Butyl Acetate
SOLUBILITY IN H2O	: Negligible		
SPECIFIC GRAVITY	: 1.2		
VAPOR PRESSURE	: 185 mm Hg @ 68 F.		
PHYSICAL STATE	: Paste		

(See Section 16 for abbreviation legend)

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Excessive heat and freezing.

INCOMPATIBILITY: Strong oxidizers and caustics.

HAZARDOUS DECOMPOSITION PRODUCTS: Normal decomposition products, i.e. COx, NOx

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

SECTION 11 - TOXICOLOGICAL PROPERTIES

(Continued on Page 5)

SECTION 11 - TOXICOLOGICAL PROPERTIES

CASRN	Chemical Name	LD50	LC50
67-64-1	Acetone	-	Rat:50100 mg/m3/8H
9004-34-6	Cellulose	Oral Rat:>5 gm/kg	Rat:>5800mg/m3/4H
123-86-4	n-Butyl acetate	Rat:10768 MG/KG	Rat:2000 PPM
9004-70-0	Cellulose nitrate	Oral Rat:>5 gm/kg	
67-63-0	Isopropyl alcohol	Rat:5045 mg/kg	Rat:16000 ppm/8H

SECTION 12 - ECOLOGICAL INFORMATION

No Information Available.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE MANAGEMENT/DISPOSAL: Recycle or incinerate at an EPA approved facility or dispose in compliance with Federal, State, and local regulations. Do not reuse empty containers. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste.

EPA WASTE CODE - If discarded (40 CFR 261): None, yields no liquid component when evaluated by EPA method 1311 (TCLP)

SECTION 14 - TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Flammable Liquid, N.O.S. (Contains acetone)
(Consumer Commodity*)

DOT HAZARD CLASS: 3(ORM-D*)

DOT UN/NA NUMBER: UN 1993(NONE*) PACKING GROUP: III(NONE*)

* For containers of 1 gallon or less

NOTE: the shipping information provided is applicable for domestic ground transport only. Different categorization may apply if shipped via other modes of transportation and / or non-domestic transport.

SECTION 15 - REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

(Continued on Page 6)

SECTION 15 - REGULATORY INFORMATION

SARA SECTION 313:
This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER
Isopropyl Alcohol	67-63-0

TOXIC SUBSTANCES CONTROL ACT:
This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

CHEMICAL NAME	CAS NUMBER
NONE	

NEW JERSEY RIGHT-TO-KNOW:
The following materials are non-hazardous, but are among the top five components in this product:

CHEMICAL NAME	CAS NUMBER
None	

PENNSYLVANIA RIGHT-TO-KNOW:
The following non-hazardous ingredients are present in the product at greater than 3%:

CHEMICAL NAME	CAS NUMBER
None	

CALIFORNIA PROPOSITION 65:
WARNING: The chemical(s) noted below and contained in this product, are known to the state of California to cause cancer, birth defects or other reproductive harm:

CHEMICAL NAME	CAS NUMBER
None.	

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for use of the 16 headings.

CANADIAN WHMIS CLASS: No information available.

(Continued on Page 7)

SECTION 16 - OTHER INFORMATION

HMIS RATINGS - HEALTH: 2 FLAMMABILITY: 3 REACTIVITY: 0

PREVIOUS MSDS REVISION DATE: 4/8/2002

VOC less water, less exempt solvent: 220 - 250 g/L (8 - 12 %)
(where acetone is exempt)

LEGEND:
- ACGIH - AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS
- N.A. - NOT APPLICABLE
- N.E. - NOT ESTABLISHED
- PEL - PERMISSIBLE EXPOSURE LIMIT
- NTP - NATIONAL TOXICOLOGY PROGRAM
- SARA - SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986
- STEL - SHORT TERM EXPOSURE LIMIT
- TLV - THRESHOLD LIMIT VALUE(8 HR. TIME WEIGHTED AVERAGE OR TWA)
- VOC - VOLATILE ORGANIC COMPOUND
- NJRTK - NEW JERSEY RIGHT TO KNOW LAW
- N.D. - NOT DETERMINED

MSDS# 79201

This data is offered in good faith as typical values and not as a product specification. No warranty either express or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review the recommendations in specific context of the intended use and determine if they are appropriate.

< End OF MSDS >

PREMIUM BLUE® SAE 15W-40
DIESEL ENGINE OIL VV70509

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Ashland P.O. Box 2219 Columbus, OH 43216	Regulatory Information Number Telephone Emergency telephone	1-800-325-3751 614-790-3333 1-800-ASHLAND (1-800-274-5263)

Product name	PREMIUM BLUE® SAE 15W-40 DIESEL ENGINE OIL
Product code	VV70509
Product Use Description	No data

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid,, amber

CAUTION! PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION.

Potential Health Effects

Routes of exposure
Inhalation, Skin contact, Eye Contact, Ingestion

Eye contact
Unlikely to cause eye irritation or injury.

Skin contact
Unlikely to cause skin irritation or injury. Prolonged or repeated contact may dry and crack the skin.

Ingestion
Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

Inhalation
It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large

amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material:, skin, lung (for example, asthma-like conditions)

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways)

Target Organs

No data

Carcinogenicity

This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA). Used motor oil has been shown to cause skin cancer in laboratory animals continually exposed by repeated applications. Avoid prolonged or repeated skin contact.

Reproductive hazard

Based on the available information, risk to the fetus from maternal exposure to this material cannot be assessed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Concentration
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAF	64742-54-7	>=80-<90%

4. FIRST AID MEASURES

Eyes

If symptoms develop, move individual away from exposure and into fresh air. Flush eyes gently with water while holding eyelids apart. If symptoms persist or there is any visual difficulty, seek medical attention.

Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Notes to physician

Hazards: Acute aspiration of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Repeated aspiration of small quantities of mineral oil can produce chronic inflammation of the lungs (i.e. lipoid pneumonia) that may progress to pulmonary fibrosis. Symptoms are often subtle and radiological changes appear worse than clinical abnormalities. Occasionally, persistent cough, irritation of the upper respiratory tract, shortness of breath with exertion, fever, and bloody sputum occur. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

Treatment: No information available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Carbon dioxide (CO2), Dry chemical, Foam, Water spray

Hazardous combustion products

carbon dioxide and carbon monoxide, oxides of sulfur, nitrogen and phosphorus, various hydrocarbons

Precautions for fire-fighting

Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.Wear full firefighting turn-out gear (full

Bunker gear), and respiratory protection (SCBA). DO NOT direct a solid stream of water or foam into hot, burning pools of liquid since this may cause frothing and increase fire intensity. Frothing can be violent and possibly endanger any firefighter standing too close to the burning liquid.

Flammability Class for Flammable Liquids
Combustible Liquid Class IIIB

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
For personal protection see section 8. Spills of this material are very slippery.

Environmental precautions
Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred.

Methods for cleaning up
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers.

Other information
Notify the proper authorities as required that a spill has occurred. Comply with all applicable federal, state, and local regulations.

7. HANDLING AND STORAGE

Handling
Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage
Store in a cool, dry, ventilated area, away from incompatible substances.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye protection

Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection

Not normally required. However, wear resistant gloves such as nitrile rubber to prevent irritation which may result from prolonged or repeated skin contact with product. Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.

Respiratory protection

Respiratory protection is not required under normal conditions of use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Form	No data
Colour	amber
Odour	hydrocarbon-like
Boiling point/boiling range	218.30 °C / 424.9 °F
pH	No data

Flash point	(>)390 °F / 199 °C, Cleveland open cup
Evaporation rate	No data
Explosion limits	1 %(V) 6 %(V)
Vapour pressure	0.01 hPa @ 70.00 °F / 21.11 °C
Vapour density	No data
Density	0.8744 g/cm3 @ 60.01 °F / 15.56 °C 7.27 lb/gal @ 60.1 °F / 15.6 °C
Solubility	No data
Partition coefficient: n-octanol/water	No data
log Pow	no data available
Autoignition temperature	No data

10. STABILITY AND REACTIVITY

Stability
Stable

Conditions to avoid
None known.

Incompatible products
Strong oxidizing agents

Hazardous decomposition products
carbon dioxide and carbon monoxide, oxides of sulfur, nitrogen and phosphorus, various hydrocarbons

Hazardous reactions
No data

Thermal decomposition
No data

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAF	LD 50 Rat: > 15 g/kg

Acute inhalation toxicity

DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAF	no data available

Acute dermal toxicity

DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAF	LD 50 Rabbit: > 5 g/kg

12. ECOLOGICAL INFORMATION

Aquatic toxicity

Acute and Prolonged Toxicity to Fish
No data
Acute Toxicity to Aquatic Invertebrates
No data

Environmental fate and pathways
No data

13. DISPOSAL CONSIDERATIONS

Waste disposal methods
Dispose of in accordance with all applicable local, state and federal regulations. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922.

14. TRANSPORT INFORMATION

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

California Prop. 65
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

SARA Hazard Classification No SARA Hazards

SARA 313 Component(s)

ZINC COMPOUNDS	ZINC COMPOUNDS	1.6072%

Reportable quantity - Components

DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAF	64742-54-7	none

	Health	Flammability	Reactivity	Other
HMIS	1	1	0	
NFPA	1	1	0	

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

MATERIAL SAFETY DATA SHEET

WORTHINGTON CYLINDERS
A Worthington Industries Company

Section 1: Product and Company Identification

Product:	Propane	**Company:**	Worthington Cylinder Corporation
Description:	Odorized Commercial Propane	**Address:**	200 Old Wilson Bridge Road Columbus, Ohio 43085
Date Issued:	February 8, 2012	**Information:**	614-438-7960
Last Revised:	April 10, 2013	**Emergency:**	CHEMTREC – (800) 424-9300

Section 2: Hazardous Ingredients and Exposure Limits

Ingredient	CAS Number	Weight %	OSHA PEL (ppm)	ACGIH TLV (ppm)
Propane	74-98-6	87.5 – 100	1000	1000[b]
Ethane	74-84-0	0 – 7.0	1000[a]	1000[b]
Propylene	115-07-1	0 – 5.0	1000[a]	500
Butane	106-97-8	0 – 2.5	1000[a]	1000[b]
Ethyl Mercaptan (odorant)	75-08-1	<0.0050	10 (Ceiling)	0.5

[a] For Liquefied petroleum gas
[b] For Aliphatic hydrocarbon gases

Section 3: Hazards Identification

Propane (also called Liquefied Petroleum Gas or LP-Gas) is a liquid fuel stored under pressure that rapidly turns into a gas at standard atmospheric temperatures and pressure. Propane is extremely flammable and explosive. At high concentrations it acts as a simple asphyxiant by diluting and displacing oxygen, particularly in confined spaces. Direct contact with liquefied product may cause freeze burns and frostbite. Vapor is heavier than air and may accumulate in low-lying areas. Use this product only in well ventilated areas and, where appropriate, proper respiratory protection and personal protective equipment should be worn. An odorant (ethyl mercaptan) is added to provide a strong unpleasant odor akin to rotten eggs.

Section 4: First Aid Measures

Eye Contact: Flush eyes with plenty of water for at least 15 minutes while occasionally lifting the eyelids. Seek medical attention.

Skin Contact: Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation or redness develops. In case of frostbite, place affected area in warm water or wrap in blankets if warm water is not available. DO NOT USE HOT WATER. Seek immediate medical attention.

Inhalation: Remove to fresh air. Administer oxygen or artificial respiration if necessary. Seek immediate medical attention.

Ingestion: Risk of ingestion is extremely low. Seek immediate medical attention in cases of ingestion or oral exposure.

Section 5: Fire and Explosion Data

Fire Hazards: Extremely flammable. Liquid releases vapors that readily form a flammable mixture with air. Dangerous fire and explosion hazard when exposed to heat, sparks or flame. Vapors are heavier than air and may

accumulate in low-lying areas and form explosive mixtures. Vapors may travel long distances to a point of ignition. Container may explode in heat or flame.

Flash Point: -156 °F (-104 °C)

Auto Ignition: 842 °F (432 °C)

Lower Explosion Limit: 2.15% by volume in air

Upper Explosion Limit: 9.6% by volume in air

Hazardous Combustion Products: Carbon monoxide, carbon dioxide and various non-combusted hydrocarbons.

Extinguishing Media: Dry chemical, foam, carbon dioxide, Halon or water.

Unusual Fire Hazards: Use extreme caution when fighting liquefied petroleum gas fires. Heated containers may rupture violently and suddenly without warning due to vessel overpressure (BLEVE-boiling liquid expanding vapor explosions). If safe to do so stop the flow of gas and allow the flame to burn out. Extinguishing the flame before shutting off the supply can cause formation of explosive mixtures. In some cases it may be preferred to allow the flame to continue to burn. Use water to cool equipment, surfaces and containers exposed to fire and excessive heat. Continue use water to cool containers until well after flames are extinguished.

Section 6: Accidental Release Measures

Evacuate all personnel from the area. Eliminate all sources of ignition. If possible, stop the flow of product. Ventilate the area thoroughly. Take precautions against static discharges. Vapors are heavier than air and may accumulate in low-lying areas and form explosive mixtures with air.

Section 7: Handling and Storage

Handling Precautions: Keep away from flame, sparks and excessive temperatures. Use only in well-ventilated areas. Containers must be grounded to avoid generation of static charges. Do not smoke while handling product. Follow use instructions fully and carefully.

Storage Requirements: Store in a cool, dry, well-ventilated area away from sources of ignition, strong oxidizers or other incompatible materials. Keep containers closed at all times. Check regularly for leaks. Ensure equipment is electrically bonded and grounded to prevent static accumulation. Post "No Smoking or Open Flame" signs in the storage and use areas. Protect cylinders against physical damage. Do not cut, drill, grind or weld on empty cylinders since they may contain explosive residues. Do not attempt to refill cylinders.

Section 8: Exposure Control/Personal Protection

Occupational Exposure Limits: See Section 2.

Engineering Controls: Good industrial hygiene practice requires that engineering controls be used where feasible to reduce workplace concentrations of hazardous materials.

Ventilation: Use adequate ventilation to keep gas and vapor concentrations of this product below the occupational exposure and flammability limits, particularly in confined spaces. Use mechanical ventilation that is explosion proof.

Respiratory Protection: Maintain oxygen levels above 19.5% in the workplace. Respirators must be worn if ambient concentrations of contaminants exceed prescribed exposure limits. Seek professional advice prior to respirator selection and use. Select respirator based on its suitability to provide adequate worker protection for given work conditions, level of airborne contamination, and presence of sufficient oxygen. When required, only professionally approved respirators should be used.

Protective Clothing: Protective clothing should be worn to prevent skin contact. Protective gloves should be worn as required for welding or burning. Use insulated gloves where there is the possibility of liquid contact.

Eye Protection: Use safety glasses or goggles as required for welding or burning. Use splash-proof goggles or faceshield where there is the possibility of liquid contact.

Section 9: Physical and Chemical Properties

Boiling Point: -44 °F (-42 °C) @ 14.7 psia	**Vapor Pressure:** 127 psig @ 70 °F
Melting Point: -306 °F (-188 °C)	**Specific Gravity of Vapor (air=1):** 1.5 @ 60 °F
Specific Gravity of Liquid (water=1): 0.504	**Solubility in Water:** Slight
Molecular Weight: 45	**Percent Volatile by Weight:** 100
Appearance: Colorless gas	**Odor:** Odorant has a foul smell akin to rotten eggs

Section 10: Stability and Reactivity

Chemical Stability: Stable

Hazardous Decomposition Products: Carbon oxides and various hydrocarbons formed when burned.

Incompatibility: Strong oxidizers, strong acids, halogens.

Hazardous Polymerization: Will not occur

Conditions to Avoid: Sources of heat, sparks or flame.

Section 11: Toxicological Information

Overview: Propane is an anesthetic and is mildly irritating to the mucous membranes. At high concentrations propane acts as a simple asphyxiant without significant potential for systemic toxicity. Direct contact with liquefied product may cause freeze burns and frostbite. Additional data can be found in the Registry of Toxic Effects of Chemical Substances available on-line from the National Institute for Occupational Safety and Health (NIOSH).

Primary Entry Routes: Inhalation

Target Organs: Respiratory system

Potential Health Effects:

- Inhalation: Product is an anesthetic at high concentrations. Inhalation may cause central nervous system depression producing dizziness, drowsiness, headache, and similar narcotic symptoms. Extremely high concentrations can cause asphyxiation and death by displacing oxygen from the breathing atmosphere.
- Eyes: Vapor is generally non-irritating to the eyes. Contact with liquefied gas or rapidly expanding gases may cause freeze burns and frostbite.
- Skin: Vapor is generally non-irritating to the skin. Contact with liquefied gas or rapidly expanding gases may cause freeze burns and frostbite.
- Ingestion: Ingestion is not likely.

Medical Conditions Aggravated by Exposure: Chronic diseases or disorders of the respiratory system.

Carcinogenic Effects: Propane is not identified as being carcinogenic by the International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP), ACGIH or OSHA.

Section 12: Ecological Information

Propane is expected to be inherently biodegradable. Propane is readily degraded by microorganisms and is therefore not expected to bioaccumulate or bioconcentrate in organisms and food chains. Propane emissions would

have practically no adverse effects on plant growth. Not expected to cause serious soil or groundwater contamination due to rapid evaporation.

Section 13: Disposal Considerations

Use the container until empty. Empty containers have residual vapor that is flammable and explosive. Waste disposal must be in accordance with appropriate federal, state and local regulations.

Section 14: Transport Information

Shipping Name: Liquefied Petroleum Gas

Hazard Class: 2.1 (Flammable Gas)

ID Number: UN 1075

IMO Shipping Name: Propane

IMO Identification Number: UN 1978

Packing Group: Not Applicable

Marking: Propane, UN 1075

Label: Flammable Gas

Placard: Flammable Gas / UN1075

Hazardous Substance/RQ: Not Applicable

Shipping Description: Propane, 2.1 (Flammable Gas), UN 1075

Packaging References: 49 CFR 173.304, 173.306, 173.314 and 173.315

Section 15: Regulatory Information

Users of this product are responsible for their own regulatory compliance on a federa, state (provincial

US Federal Regulations:

- OSHA Hazardous Communication (29 CFR Part 1910.1200): This product is hazardous as defined in OSHA's Hazard Communication standard.
- OSHA Process Safety Management (29 CFR Part 1910.119): This product may be subject to OSHA's Process Safety Management of Highly Hazardous Chemicals standard.
- CERCLA Reportable Quantities (40 CFR Part 302.4): This product is not reportable under 40 CFR Part 302.4.
- Extremely Hazardous Substances (40 CFR Part 355): This product is not regulated under 40 CFR Part 355.
- SARA 311/312 Hazard Class (40 CFR Part 370): The following hazard categories apply to this product:
  - Acute Health Hazard
  - Fire Hazard
  - Sudden Release of Pressure
- SARA 313 (40 CFR Part 372): This product may contain up to 5.0% propylene (CAS 115-07-1) which is reportable under 40 CFR Part 372.
- TSCA Inventory Status: Propane is listed on the TSCA Inventory.
- Chemical Accident Prevention Provisions (40 CFR Part 68): Propane is subject to the reporting requirements of 40 CFR Part 68.

State Regulations:

- California Proposition 65: This product is not listed.

- Several states have specific regulations related to hazardous materials. Consult local officials for additional state requirements.

Other Regulations:

- Canada DSL/NDSL Inventory: Propane is listed on the Domestic Substances List.

Section 16: Other Information

Hazard Ratings:

NFPA:	H-1, F-4, R-0
HMIS®:	H-1, F-4, PH-0
WHIMS:	A, B1

The HMIS ratings displayed on this MSDS are from the HMIS Third Edition. There have been significant changes made to the system. "PH" stands for "Physical Hazard" as defined in the OSHA Hazardous Communication Standard and replaces the former code "R" for "Reactivity."

Disclaimer: All information in this Material Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.

Material Safety Data Sheet

Date of issue 16 August 2013
Version 30.01

1. Product and company identification

Product name : PURE PERFORMANCE EGGSHELL PASTEL
Code : 9-310
Supplier : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272
Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)
Technical Phone Number : 1-800-441-9695 (8:00 am to 5:00 pm EST)

2. Hazards identification

Emergency overview : WARNING!

MAY BE HARMFUL IF INHALED OR SWALLOWED. SANDING AND GRINDING DUSTS MAY BE HARMFUL IF INHALED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation : May be harmful if inhaled.
Ingestion : May be harmful if swallowed.
Skin : No known significant effects or critical hazards.
Eyes : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.
Ingestion : No specific data.
Skin : No specific data.
Eyes : No specific data.

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
titanium dioxide	13463-67-7	7 - 13
Limestone	1317-65-3	3 - 7
Nepheline syenite	37244-96-5	1 - 5
pyrithione zinc	13463-41-7	0.1 - 1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

gestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

zardous combustion oducts : Decomposition products may include the following materials:
carbon oxides
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

ndling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not swallow. Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Do not store below the following temperature: 32F / 0C.

8 . Exposure controls/personal protection

Name	Result	ACGIH	OSHA	Ontario	Mexico	IPEL
titanium dioxide	TWA	10 mg/m³	15 mg/m³ TD	10 mg/m³ TD	10 mg/m³ (as Ti)	Not established
	STEL	Not established	Not established	Not established	20 mg/m³ (as Ti)	Not established
mestone	TWA	Not established	5 mg/m³ R 15 mg/m³ TD	Not established	10 mg/m³	Not established
	STEL	Not established	Not established	Not established	20 mg/m³	Not established
Nepheline syenite	TWA	Not established	Not established	10 mg/m³ TD	Not established	Not established

Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

ygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

8 . Exposure controls/personal protection

yes	:	Safety glasses with side shields.
Hands	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Respiratory	:	If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Skin	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Environmental exposure controls	:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state	:	Liquid.
Flash point	:	Closed cup: >93.33°C (>200°F)
Color	:	Not available.
Odor	:	Not available.
	:	Not available.
Boiling/condensation point	:	>37.78°C (>100°F)
Melting/freezing point	:	Not available.
Specific gravity	:	1.23
Density (lbs / gal)	:	10.26
Vapor pressure	:	2.3 kPa (17.5 mm Hg) [room temperature]
Vapor density	:	Not available.
Volatility	:	67% (v/v), 54.96% (w/w)
Evaporation rate	:	0.36 (butyl acetate = 1)
Partition coefficient: n-octanol/water	:	Not available.
% Solid. (w/w)	:	45.04

10 . Stability and reactivity

Stability	:	Stable under recommended storage and handling conditions (see Section 7).
Conditions to avoid	:	No specific data.
Materials to avoid	:	Reactive or incompatible with the following materials:,acids,oxidizing materials,strong alkalis
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
titanium dioxide	LD50 Oral	Rat	>10 g/kg	-
pyrithione zinc	LD50 Oral	Rat	177 mg/kg	-
	LD50 Dermal	Rabbit	100 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	140 mg/m³	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Target organs : Contains material which may cause damage to the following organs: lungs, upper respiratory tract, skin, eyes.

Carcinogenicity

Carcinogenicity : Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Classification

Product/ingredient name	ACGIH	IARC	NTP	OSHA
titanium dioxide	A4	2B	-	-

Carcinogen Classification code:
ACGIH: A1, A2, A3, A4, A5
IARC: 1, 2A, 2B, 3, 4
NTP: Proven, Possible
OSHA: +
Not listed or regulated as a carcinogen: -

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
pyrithione zinc	Acute LC50 2.68 ppb Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
	Acute LC50 400 ppb Marine water	Fish - Sheepshead minnow - Cyprinodon variegatus	96 hours
	Acute EC50 8.25 ppb Fresh water	Daphnia - Water flea - Daphnia magna	48 hours

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

13 . Disposal considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Additional information
UN	None.	Not regulated.	None.	-	-
IMDG	None.	Not regulated.	None.	-	-
DOT	None.	Not regulated.	None.	-	-

PG* : Packing group

Reportable quantity RQ : CERCLA: Hazardous substances.: pyrithione zinc;

15 . Regulatory information

United States inventory (TSCA 8b) : All components are listed or exempted.
Australia inventory (AICS) : At least one component is not listed.
Canada inventory (DSL) : All components are listed or exempted.
China inventory (IECSC) : Substance Use Restricted
Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.
Japan inventory (ENCS) : At least one component is not listed.
Korea inventory (KECI) : At least one component is not listed.
New Zealand (NZIoC) : Substance Use Restricted
Philippines inventory (PICCS) : At least one component is not listed.

United States

U.S. Federal regulations :
SARA 302/304: acrylonitrile; ethylene oxide; Formaldehyde
CERCLA: Hazardous substances.: pyrithione zinc;

SARA 311/312 SDS Distribution - Chemical Inventory - Hazard Identification:

Chemical name	CAS #	Acute	Chronic	Fire	Reactive	Pressure
titanium dioxide	13463-67-7	N	Y	N	N	N
Limestone	1317-65-3	N	N	N	N	N
	Product as-supplied :	N	Y	N	N	N

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

Canada

WHMIS (Canada) : Class D-2A: Material causing other toxic effects (Very toxic).

Mexico

Classification

Flammability : 1 **Health** : 1 **Reactivity** : 0

16 . Other information

Hazardous Material Information System (U.S.A.)

Health : 1 * Flammability : 1 Physical hazards : 0
(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 1 Flammability : 1 Instability : 0

Date of previous issue : 8/6/2013.

Organization that prepared the MSDS : EHS

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

Material Safety Data Sheet

Date of issue 16 August 2013
Version 27.01

1. Product and company identification

Product name : PURE PERFORMANCE EGGSHELL MIDTONE

Code : 9-320

Supplier : PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272

Emergency telephone number : (412) 434-4515 (U.S.)
(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)

Technical Phone Number : 1-800-441-9695 (8:00 am to 5:00 pm EST)

2. Hazards identification

Emergency overview : WARNING!

MAY BE HARMFUL IF INHALED OR SWALLOWED. SANDING AND GRINDING DUSTS MAY BE HARMFUL IF INHALED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation : May be harmful if inhaled.

Ingestion : May be harmful if swallowed.

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : No specific data.

Skin : No specific data.

Eyes : No specific data.

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
Nepheline syenite	37244-96-5	5 - 10
titanium dioxide	13463-67-7	5 - 10
Limestone	1317-65-3	1 - 5
pyrithione zinc	13463-41-7	0.1 - 1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting this section.

4 . First aid measures

ngestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

zardous combustion oducts : Decomposition products may include the following materials:
carbon oxides
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not swallow. Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Do not store below the following temperature: 32F / 0C.

8 . Exposure controls/personal protection

Name	Result	ACGIH	OSHA	Ontario	Mexico	IPEL
Nepheline syenite	TWA	Not established	Not established	10 mg/m³ TD	Not established	Not established
titanium dioxide	TWA	10 mg/m³	15 mg/m³ TD	10 mg/m³ TD	10 mg/m³ (as Ti)	Not established
	STEL	Not established	Not established	Not established	20 mg/m³ (as Ti)	Not established
Limestone	TWA	Not established	5 mg/m³ R 15 mg/m³ TD	Not established	10 mg/m³	Not established
	STEL	Not established	Not established	Not established	20 mg/m³	Not established

Key to abbreviations

A = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists.
C = Ceiling Limit
F = Fume
IPEL = Internal Permissible Exposure Limit
OSHA = Occupational Safety and Health Administration.
R = Respirable
Z = OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances
S = Potential skin absorption
SR = Respiratory sensitization
SS = Skin sensitization
STEL = Short term Exposure limit values
TD = Total dust
TLV = Threshold Limit Value
TWA = Time Weighted Average

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Engineering measures : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

8 . Exposure controls/personal protection

Eyes	: Safety glasses with side shields.
Hands	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Respiratory	: If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Skin	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state	: Liquid.
Flash point	: Closed cup: >93.33°C (>200°F)
Color	: Not available.
Odor	: Not available.
[illegible]	: Not available.
[illegible]oiling/condensation point	: >37.78°C (>100°F)
Melting/freezing point	: Not available.
Specific gravity	: 1.21
Density (lbs / gal)	: 10.1
Vapor pressure	: 2.3 kPa (17.5 mm Hg) [room temperature]
Vapor density	: Not available.
Volatility	: 69% (v/v), 56.88% (w/w)
Evaporation rate	: 0.36 (butyl acetate = 1)
Partition coefficient: n-octanol/water	: Not available.
% Solid. (w/w)	: 43.12

10 . Stability and reactivity

Stability	: Stable under recommended storage and handling conditions (see Section 7).
Conditions to avoid	: No specific data.
Materials to avoid	: Reactive or incompatible with the following materials:,acids,oxidizing materials,strong alkalis
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
titanium dioxide	LD50 Oral	Rat	>10 g/kg	-
pyrithione zinc	LD50 Oral	Rat	177 mg/kg	-
	LD50 Dermal	Rabbit	100 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	140 mg/m³	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Target organs : Contains material which may cause damage to the following organs: lungs, upper respiratory tract, skin, eyes.

Carcinogenicity

Carcinogenicity : Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Classification

Product/ingredient name	ACGIH	IARC	NTP	OSHA
titanium dioxide	A4	2B	-	-

Carcinogen Classification code:
ACGIH: A1, A2, A3, A4, A5
IARC: 1, 2A, 2B, 3, 4
NTP: Proven, Possible
OSHA: +
Not listed or regulated as a carcinogen: -

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
pyrithione zinc	Acute LC50 2.68 ppb Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
	Acute LC50 400 ppb Marine water	Fish - Sheepshead minnow - Cyprinodon variegatus	96 hours
	Acute EC50 8.25 ppb Fresh water	Daphnia - Water flea - Daphnia magna	48 hours

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

13 . Disposal considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Additional information
UN	None.	Not regulated.	None.	-	-
IMDG	None.	Not regulated.	None.	-	-
DOT	None.	Not regulated.	None.	-	-

PG* : Packing group

Reportable quantity RQ : CERCLA: Hazardous substances.: pyrithione zinc;

15 . Regulatory information

United States inventory (TSCA 8b) : All components are listed or exempted.
Australia inventory (AICS) : At least one component is not listed.
Canada inventory (DSL) : All components are listed or exempted.
China inventory (IECSC) : Substance Use Restricted
Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.
Japan inventory (ENCS) : At least one component is not listed.
Korea inventory (KECI) : At least one component is not listed.
New Zealand (NZIoC) : Substance Use Restricted
Philippines inventory (PICCS) : At least one component is not listed.

United States

U.S. Federal regulations :
SARA 302/304: ethylene oxide; Formaldehyde
CERCLA: Hazardous substances.: pyrithione zinc;

SARA 311/312 SDS Distribution - Chemical Inventory - Hazard Identification:

Chemical name	CAS #	Acute	Chronic	Fire	Reactive	Pressure
titanium dioxide	13463-67-7	N	Y	N	N	N
Limestone	1317-65-3	N	N	N	N	N
	Product as-supplied :	N	Y	N	N	N

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

Canada

WHMIS (Canada) : Class D-2A: Material causing other toxic effects (Very toxic).

Mexico

Classification

Flammability : 1 **Health** : 1 **Reactivity** : 0

16 . Other information

azardous Material Information System (U.S.A.)

Health : 1 * Flammability : 1 Physical hazards : 0
(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 1 Flammability : 1 Instability : 0

Date of previous issue : 8/6/2013.

Organization that prepared the MSDS : EHS

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.

Material Safety Data Sheet

Date of issue 16 August 2013
Version 37

1. Product and company identification

Product name	: PURE PERFORMANCE S/G PASTEL BASE
Code	: 9-510
Supplier	: PPG Industries, Inc. One PPG Place Pittsburgh, PA 15272
Emergency telephone number	: (412) 434-4515 (U.S.) (514) 645-1320 (Canada) 01-800-00-21-400 (Mexico)
Technical Phone Number	: 1-800-441-9695 (8:00 am to 5:00 pm EST)

2. Hazards identification

Emergency overview : WARNING!

MAY BE HARMFUL IF INHALED OR SWALLOWED. SANDING AND GRINDING DUSTS MAY BE HARMFUL IF INHALED. MAY CAUSE RESPIRATORY TRACT AND EYE IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation	: May be harmful if inhaled. Slightly irritating to the respiratory system.
Ingestion	: May be harmful if swallowed.
Skin	: No known significant effects or critical hazards.
Eyes	: Moderately irritating to eyes.

Over-exposure signs/symptoms

Inhalation	: Adverse symptoms may include the following: respiratory tract irritation coughing
Ingestion	: No specific data.
Skin	: No specific data.
Eyes	: Adverse symptoms may include the following: irritation watering redness
Medical conditions aggravated by over-exposure	: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (Section 11)

3 . Composition/information on ingredients

ame	CAS number	%
itanium dioxide	13463-67-7	7 - 13
Kaolin	1332-58-7	1 - 5
pyrithione zinc	13463-41-7	0.1 - 1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.

Skin contact : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners.

Inhalation : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Ingestion : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do NOT induce vomiting.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist *immediately if large quantities have been ingested or inhaled.*

. Fire-fighting measures

Flammability of the product : In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous combustion products : Decomposition products may include the following materials:
metal oxide/oxides

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. *Prevent entry into sewers, water courses, basements or confined areas.* Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6 . Accidental release measures

Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not swallow. Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. Do not store below the following temperature: 32F / 0C.

8 . Exposure controls/personal protection

ame	Result	ACGIH	OSHA	Ontario	Mexico	IPEL
itanium dioxide	TWA	10 mg/m³	15 mg/m³ TD	10 mg/m³ TD	10 mg/m³ (as Ti)	Not established
	STEL	Not established	Not established	Not established	20 mg/m³ (as Ti)	Not established
Kaolin	TWA	2 mg/m³ R	5 mg/m³ R 15 mg/m³ TD	2 mg/m³ R	10 mg/m³	Not established
	STEL	Not established	Not established	Not established	20 mg/m³	Not established

Key to abbreviations

A = Acceptable Maximum Peak
ACGIH = American Conference of Governmental Industrial Hygienists.
C = Ceiling Limit
F = Fume
IPEL = Internal Permissible Exposure Limit
OSHA = Occupational Safety and Health Administration.
R = Respirable
Z = OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances
S = Potential skin absorption
SR = Respiratory sensitization
SS = Skin sensitization
STEL = Short term Exposure limit values
TD = Total dust
TLV = Threshold Limit Value
TWA = Time Weighted Average

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

gineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

8 . Exposure controls/personal protection

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Eyes : Safety glasses with side shields.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Respiratory : If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Liquid.

Flash point : Closed cup: >93.33°C (>200°F)

Color : Not available.

Odor : Not available.

pH : Not available.

Boiling/condensation point : >37.78°C (>100°F)

Melting/freezing point : Not available.

Specific gravity : 1.17

Density (lbs / gal) : 9.76

Vapor pressure : 2.3 kPa (17.5 mm Hg) [room temperature]

Vapor density : Not available.

Volatility : 68% (v/v), 57.88% (w/w)

Evaporation rate : 0.36 (butyl acetate = 1)

Partition coefficient: n-octanol/water : Not available.

% Solid. (w/w) : 42.12

10 . Stability and reactivity

Stability : Stable under recommended storage and handling conditions (see Section 7).

Conditions to avoid : No specific data.

Materials to avoid : Reactive or incompatible with the following materials:,acids,oxidizing materials,strong alkalis

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
titanium dioxide	LD50 Oral	Rat	>10 g/kg	-
Kaolin	LD50 Oral	Rat	>5000 mg/kg	-
pyrithione zinc	LD50 Oral	Rat	177 mg/kg	-
	LD50 Dermal	Rabbit	100 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	140 mg/m³	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Target organs : Contains material which causes damage to the following organs: eyes. Contains material which may cause damage to the following organs: lungs, upper respiratory tract, skin, stomach.

Carcinogenicity

Carcinogenicity : Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Classification

Product/ingredient name	ACGIH	IARC	NTP	OSHA
titanium dioxide	A4	2B	-	-
Kaolin	A4	-	-	-

Carcinogen Classification code:
ACGIH: A1, A2, A3, A4, A5
IARC: 1, 2A, 2B, 3, 4
NTP: Proven, Possible
OSHA: +
Not listed or regulated as a carcinogen: -

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
pyrithione zinc	Acute LC50 2.68 ppb Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
	Acute LC50 400 ppb Marine water	Fish - Sheepshead minnow - Cyprinodon variegatus	96 hours
	Acute EC50 8.25 ppb Fresh water	Daphnia - Water flea - Daphnia magna	48 hours

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some

13 . Disposal considerations

product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Additional information
UN	None.	Not regulated.	None.	-	-
IMDG	None.	Not regulated.	None.	-	-
DOT	None.	Not regulated.	None.	-	-

PG* : Packing group

Reportable quantity RQ : CERCLA: Hazardous substances.: pyrithione zinc;

15 . Regulatory information

United States inventory (TSCA 8b) : All components are listed or exempted.

Australia inventory (AICS) : At least one component is not listed.

Canada inventory (DSL) : All components are listed or exempted.

China inventory (IECSC) : Substance Use Restricted

Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.

Japan inventory (ENCS) : At least one component is not listed.

Korea inventory (KECI) : At least one component is not listed.

New Zealand (NZIoC) : Substance Use Restricted

Philippines inventory (PICCS) : At least one component is not listed.

United States

U.S. Federal regulations :

SARA 302/304: acrylonitrile; ethylene oxide; propylene oxide; Formaldehyde

CERCLA: Hazardous substances.: pyrithione zinc;

SARA 311/312 SDS Distribution - Chemical Inventory - Hazard Identification:

Chemical name	CAS #	Acute	Chronic	Fire	Reactive	Pressure
Titanium dioxide	13463-67-7	N	Y	N	N	N
Kaolin	1332-58-7	Y	N	N	N	N
	Product as-supplied :	Y	Y	N	N	N

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

Canada

WHMIS (Canada) : Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).

Mexico

Classification

Flammability : 1 **Health** : 1 **Reactivity** : 0

16 . Other information

Hazardous Material Information System (U.S.A.)

Health : 1 * Flammability : 1 Physical hazards : 0
(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on MSDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 1 Flammability : 1 Instability : 0

Date of previous issue : 3/12/2013.

Organization that prepared the MSDS : EHS

▽ Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.